

Maria Curie-Skłodowska University in Lublin. Faculty of Pedagogy and Psychology

KAMIL GÓRA, KATARZYNA BIJAS, JOANNA NADZIEJA DZIUBEK,  
ADRIAN KORNILUK, JULIA KURTYKA, ANNA LEDWOŃ,  
JUSTYNA GERŁOWSKA

ORCID: 0000-0002-4700-4776, kamil.goraa@wp.pl

ORCID: 0000-0002-5360-8031, k.bijas98@gmail.com

ORCID: 0000-0003-1176-0534, joannanadziejadziubek@gmail.com

ORCID: 0000-0001-9311-0257, korniluk.adrian@gmail.com

ORCID: 0000-0002-6177-0530, aepparse@gmail.com

ORCID: 0000-0002-2376-8747, ajkaledwon@gmail.com

ORCID: 0000-0003-0119-9077, justyna.gerlowska@poczta.umcs.lublin.pl

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### *Students' Welfare during SARS-CoV-2 Pandemic*

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Dobrostan studentów w czasie pandemii koronawirusa SARS-CoV-2

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### ABSTRACT

The introduced by WHO in March 2020 state of pandemic due to SARS-CoV-2 outburst forced many societies to change their everyday existence. The necessary safety regulations have been introduced in Poland influencing the so far existing way of social interactions and education. The psychological burden of the current situation on the studying young adults is analysed herein. In the scope of the current research is the welfare of the Polish students. The preliminary data suggests existence of the frail population especially susceptible to the negative influence of the pandemic. The higher prevalence of negative emotions and persistent negative thoughts combined with somatization is observed within this group. The overall adequate adjustment of the majority of the students is observed. Such result has been obtained by introduction of the goal-oriented behaviours recommended by the international and national health organizations.

**Keywords:** emotion; public health; psychological stress; COVID-19

## INTRODUCTION

Within the first months of 2020, the functioning of the world population has been changed due to the SARS-CoV-2 outbreak. The pathogen primarily targeting animals such as bats and pangolins due to still not discovered origins infected the Chinese population of Wuhan (Andersen, Rambaut, Lipkin, Holmes, Garry, 2020; Shereen, Khan, Kazmi, Bashir, Siddique, 2020). Due to intense migrations and long period of incubation (2–14 days) the coronavirus infection began to be the world threat. The disease caused by SARS-CoV-2 coronavirus (COVID-19) manifests by multiple non-specific symptoms such as: fever, cough, shortness of breath or difficulty breathing, headache, sore throat, new loss of taste or smell, muscle pain and general tiredness (CDC, 2020; WHO, 2020a, 2020b). Among the most severe are respiratory distress and nervous system damage (Wu et al., 2020). The mortality rate is estimated to 2–4% of the cases. Approximately 80% of cases are mild and not requiring medical attention. So far it was possible to establish the factors connected with more severe disease progression and the high-risk patients' groups (Fang, Karakiulakis, Roth, 2020; Zhou et al., 2020; Xydakis et al., 2020). It has been reported that mortality and the severity of the disease differ in different age groups. It is assumed that younger adults if infected show less severe symptoms and the mortality rate is less than 0.5%.

Most of the countries' governments affected by the pandemic introduced several restrictions. Poland has been one of the European countries reporting the increase in COVID-19 patient ratio from March 2020 onwards. The increasing number of cases forced introduction of the several restrictions (i.e. social distancing, on-line education and work). The introduction of the on-line form of learning and temporal ban of social contacts in the education facilities changed the way of studying and influenced the everyday activities of millions of persons (Journal of Laws pos. 405 as amended; Viner et al., 2020) .

The psychological burden of the current situation is not only connected with uncertainty and possibility of disease contraction, but isolation and quarantine too (Brooks, Webster, Smith, Woodland, Wessely, Greenberg, Rubin, 2020; Liu, 2020). The development of the emotions, cognitive assessment and behavioural symptoms are moderated by individual traits (i.e. stress coping styles, personality, underlining psychiatric conditions), and group processes (i.e. vicarious traumatization, stigma, perceived risk and resources management) (Strong, 1990; Pappas, Kiriaze, Giannakis, Falagas, 2009). The unique overlapping influence of nature and nurture could be observed in individual adjustment to the current situation (Liu, 2020; Moccia, 2020; Tian, Li, Tian, Yang, Shao, Tian, 2020). According to stress theory and perceived risk theory the negative emotions and affect cognitive assessment are connected with the individual's perceived assets and loss-gain ratio (Biggs, Brough, Drummond, 2017; Slovic, Peters, 2006; Heszen, Sęk,

2007; Heszen, 2013; Huber, 2010; Crum, Salovey, Achor, 2013). It is frequently observed that the negative emotions induced by stressful situations are reported by the subjects as medically unexplained physical symptoms (Nitsch, Jabłoński, Samochowiec, Kurpisz, 2015). In case of underlining conditions (i.e. depression and anxiety disorder), the somatization is more profound and disorganizes the person's existence (Hurwitz, 2004; Kraszewska-Orzechowska, 2007).

Due to the uniqueness of the current situation it is impossible to forecast the impact of the uncertainty of the pandemic and the introduced restrictions on everyday well-being. Therefore, the authors have undertaken the effort to investigate the potential outcome of pandemic in the group of Polish citizens. For the purpose of the study, the following research questions have been posed:

1. Is the current novel situation influencing the well-being of the young adults?
2. Are there significant differences in coping strategies among young adults simultaneously working and studying in comparison to only studying group?
3. Are the coping strategies similar to the previously observed in situations of direct threat to health and general welfare?
4. Are there gender differences in the undertaken coping strategies?
5. Is the group showing the symptoms of somatisation?

## METHODS

Within this study, the authors tried to explore how the studying young adults (18–35 yrs.) adapted to the changing situation. The study has been approved by the local ethics committee on 7 April 2020. The presented herein results are the preliminary findings of the on-line survey targeting the difficult subject which is psychological well-being of the Polish society during the SARS-Cov-2 pandemic.

For the purpose of this manuscript, the sample of the 271 participants (female  $N = 226$ ) with the student status (studying  $N = 177$ , working and studying  $N = 94$ ) has been extracted. The data has been collected on-line from 9 to 18 April 2020. The survey was introduced as a post at fan page of Studenckie Koło Naukowe Psychologii "Adesse" UMCS and through the authors' private social accounts. The on-line way of studying has been introduced for the past month and most of the academic activities has been introduced according to the governmental guidelines. The number of cases reported within the period of data collection increased from 5,205 to 8,379 confirmed cases, from 159 to 332 deaths, and approximate 300 new cases daily increase (WHO, 2020c; WHO, 2020d).

## RESULTS

The sample of the 271 studying young adults (18–35 yrs.) has been selected to investigate the introduced coping strategies. The sample consisted of 226 females

and 45 men, most of them reported to live in the family household ( $N = 197$ ). Almost half of the sample reported to be in the romantic relationship ( $N = 137$ ) and presented themselves as a religious person ( $N = 147$ ). The sample is slightly biased in terms of gender (83% female compared to 60% in general population of the students) but its overall characteristic is similar to the Polish students population (CBOS, 2017; GUS, 2019). Only one participant declared to be in 14-day quarantine due to potential COVID-19 infection, two participants suspected infection but has not been diagnosed with COVID-19. Other 268 participants declared their status as healthy.

The survey consisted of 54 items in total, 27 items have been clustered into subscales and analysed herein. The items and their descriptive statistics for the participants' groups are presented in Table 1. The items have been clustered into subscales on the basis of the participants' activities performed. The subscales are connected with the main two coping with stress strategies described by Folkman and Lazarus (Biggs, Brough, Drummond, 2017): goal-oriented and emotion-oriented coping style. The items in goal-oriented subscale are connected with active actions undertaken by the participants targeting the subject's behaviours based on the cognitive assessment of the situation and conscious introduction of the activities in everyday practice. On the other hand, the negative emotions subscale is connected with short-term and long-term emotional states self-reported by the subjects in regard to current situation. The persistent negative thoughts subscale has been subtracted in connection to the clinical manifestation of the generalized anxiety (i.e. difficulty maintaining concentration, excessive worry focused on everyday events, family and health) and post-traumatic stress disorder symptoms (i.e. hypervigilance and active avoidance of thoughts and memories, activities, situations and people connected to the traumatising event) classified in ICD-11 (2020). The subscale items high scores could indicate the underlying condition which is a direct threat to the subject's welfare.

The normality of distribution has been confirmed for all the items within all the groups. Significant statistical differences between groups were confirmed for the "I try to keep away from coughing or sneezing persons in public" and "Coronavirus is not threatening to me nor to my family" items. The differences between groups may be connected with the higher potential social exposure during work performed by the working students and therefore subjectively higher possibility of infection. No other statistically significant differences were observed between the groups.

Table 1. Detailed descriptive statistics of the survey items

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Goal-oriented behaviour (10 items)	I reject the thought that I could be infected with coronavirus. [ <i>Odrzucam od siebie myśl, że mógłbym/ mogłabym być zarażona koronawirusem. (reversed)</i> ]	Whole sample	3.73	1.59	4	1	7	–	–
		Students	3.84	1.53	4	1	7	7320	-1.65
		Working students	3.52	1.67	3	1	7		
	I prepare myself for the coronavirus by preparing supplies. [ <i>Przygotowuję się na koronawirusa, robiąc zapasy.</i> ]	Whole sample	3.21	1.69	3	1	7	–	–
		Students	3.23	1.67	3	1	7	8070	-0.42
		Working students	3.16	1.74	3	1	7		
	I try to stay at home in order to lower the potentiality of contracting coronavirus. [ <i>Staram się pozostawać w domu, by nie narażać się na styczność z koronawirusem.</i> ]	Whole sample	6.14	1.23	7	1	7	–	–
		Students	6.2	1.12	7	1	7	8233	-0.15
		Working students	6.04	1.42	7	1	7		
	Due to pandemic personal hygiene is at the center of my attention. [ <i>W związku z pandemią przykładam szczególną uwagę do kwestii higienicznych.</i> ]	Whole sample	5.84	1.2	6	1		–	–
		Students	5.84	1.1	6	2	7	7668	-1.12
		Working students	5.84	1.41	6	1	7		
I use different remedies believing that they will protect me from contracting the coronavirus. [ <i>Stosuję różnego rodzaju środki pozamedyczne wierząc, że uchronią mnie one przed zachorowaniem na koronawirusa.</i> ]	Whole sample	2.68	1.7	2	1	7	–	–	
	Students	2.71	1.6	2	1	7	7680	-1.07	
	Working students	2.24	1.86	2	1	7			

Table 1 cont.

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Goal-oriented behaviour (10 items)	I find situation connected with coronavirus motivating to develop new skills. [ <i>Sytuacja związana z koronawirusem motywuje mnie do rozwijania nowych umiejętności.</i> ]	Whole sample	4.01	1.77	4	1	7	–	–
		Students	4.06	1.79	5	1	7	7956	-0.6
		Working students	3.93	1.72	4	1	7		
	Current situation makes me more eager to devote more time to my family. [ <i>Sytuacja związana z koronawirusem sprawia, że chcę poświęcić więcej czasu rodzinie.</i> ]	Whole sample	4.23	1.69	5	1	7	–	–
		Students	4.28	1.58	5	1	7	8125	-0.32
		Working students	4.15	1.87	5	1	7		
	I try to keep as far as possible from coughing and sneezing persons in public places. [ <i>Staram się trzymać jak najdalej od osób kaszlących lub kichających w miejscach publicznych.</i> ]	Whole sample	6.03	1.17	6	1	7	–	–
		Students	5.95	1.14	6	1	7	7097.5*	-2.12*
		Working students	6.17	1.22	7	1	7		
	I find it easy to introduce the quarantine rules. [ <i>Z łatwością przychodzi mi dostosowanie się do zasad kwarantanny, które mają na celu zapobieganie rozprzestrzeniania się koronawirusa.</i> ]	Whole sample	4.97	1.73	5	1	7	–	–
		Students	5.07	1.66	5	1	7	7701	-1.03
		Working students	4.79	1.85	5	1	7		
I am better with time organization in current situation. [ <i>W sytuacji zagrożenia pandemią koronawirusa umiem lepiej zorganizować swój czas.</i> ]	Whole sample	3.39	1.8	3	1	7	–	–	
	Students	3.51	1.8	3	1	7	7434.5	-1.462	
	Working students	3.18	1.8	3	1	7			

Table 1 cont.

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Negative emotions (6 items)	I can relax myself [ <i>Potrafię się odprężyć.</i> (reversed)]	Whole sample	4.99	1.53	5	1	7	–	–
		Students	5	1.49	5	1	7	8247	-0.12
		Working students	4.97	1.62	5	1	7		
	Currently I am optimistic about the future. [ <i>Obecnie przyszłość postrzegam optymistycznie.</i> (reversed)]	Whole sample	3.94	1.66	4	1	7	–	–
		Students	3.82	1.65	4	1	7	7362	-1.59
		Working students	4.17	1.66	5	1	7		
	I find coronavirus frightening. [ <i>Koronawirus budzi we mnie niepokój.</i> ]	Whole sample	4.64	1.64	5	1	7	–	–
		Students	4.58	1.65	5	1	7	7660	-1.11
		Working students	4.77	1.62	5	1	7		
	Currently I try to keep calm. [ <i>Staram się zachować spokój w obecnej sytuacji.</i> (reversed)]	Whole sample	5.89	1	6	2	7	–	–
		Students	5.88	1.06	5	2	7	8287	-0.05
		Working students	5.93	0.88	6	2	7		
	I feel fear of contracting the coronavirus. [ <i>Odczuwam strach przed zarażeniem korona wirusem.</i> ]	Whole sample	3.92	1.91	4	1	7	–	–
		Students	3.85	1.89	4	1	7	7860	-0.76
		Working students	4.04	1.95	4	1	7		
The growing number of infected cases stresses me up. [ <i>Stresuje mnie myśl o zwiększającej się liczbie przypadków zarażenia koronawirusem.</i> ]	Whole sample	4.24	1.67	5	1	7	–	–	
	Students	4.25	1.66	5	1	7			
	Working students	4.22	1.7	5	1	7			

Table 1 cont.

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Persistent negative thoughts (8 items)	The current situation makes me find time to rest. [ <i>Sytuacja związana z koronawirusem sprawia, że znajduję czas na odpoczynek. (reversed)</i> ]	Whole sample	4.53	1.89	5	1	7	–	–
		Students	4.67	1.78	5	1	7	7555.5	-1.26
		Working students	4.27	2.08	5	1	7		
	I can be free of thinking about coronavirus. [ <i>Potrafię uwolnić się od myśli o koronawirusie. (reversed)</i> ]	Whole sample	5.73	1.47	6	1	7	–	–
		Students	5.67	1.52	5	1	7	7793.5	-0.9
		Working students	5.86	1.37	6	1	7		
	I find myself often thinking about coronavirus threat of infection. [ <i>Często myślę o zagrożeniu zarażenia się koronawirusem.</i> ]	Whole sample	3.65	1.81	3	1	7	–	–
		Students	3.67	1.82	3	1	7	8224.5	-0.16
		Working students	3.62	1.81	3	1	7		
	Coronavirus infection is not a threat to me nor my relatives. [ <i>Koronawirus nie zagraża ani mnie, ani moim bliskim. (reversed)</i> ]	Whole sample	2.43	1.32	2	1	6	–	–
		Students	2.57	1.35	2	1	6	6830.5*	-2.5*
		Working students	2.16	1.24	2	1	6		
	I feel anxious if I have to perform activities outside my apartment. [ <i>Odczuwam niepokój, jeżeli muszę wykonać zadania wymagające opuszczenie miejsca zamieszkania.</i> ]	Whole sample	3.76	1.78	4	1	7	–	–
		Students	3.83	1.69	4	1	7	7705	-1.02
		Working students	3.63	1.95	3	1	7		

Table 1 cont.

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Persistent negative thoughts (8 items)	I have often difficulties in focusing attention due to WHO proclaimed pandemic. [Często odczuwam problemy ze skupieniem się na wykonywanej czynności ze względu na pandemię ogłoszoną przez WHO.]	Whole sample	3	1.75	2	1	7	–	–
		Students	3.04	1.73	2	1	7	7957.5	-0.6
		Working students	2.94	1.79	3	1	7		
	I think about all the coronavirus information for a long time. [Długo rozmyślam nawet nad najmniejszymi doniesieniami dotyczącymi koronawirusa.]	Whole sample	2.4	1.44	2	1	7	–	–
		Students	2.45	1.46	2	1	7	7908.5	-0.69
		Working students	2.31	1.39	2	1	7		
	I try to avoid thinking about potential threat connected with coronavirus pandemic hoping for the problem self-resolving. [W sytuacji zagrożenia pandemią koronawirusa staram się o niej nie myśleć, z nadzieją, że problem sam się rozwiąże. (reversed)]	Whole sample	3.76	1.55	4	1	7	–	–
		Students	3.81	1.43	4	1	7	7865	-0.75
		Working students	3.67	1.76	3	1	7		

Table 1 cont.

Subscale	Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Negative emotions and persistent negative thoughts (2 items)	I feel less and less energy every day. [ <i>Z każdym dniem mam coraz mniej energii.</i> ]	Whole sample	3.88	1.86	4	1	7	–	–
		Students	3.81	1.81	4	1	7	7823.5	-0.82
		Working students	4	1.95	4	1	7		
	Currently I am worrying about my health status. [ <i>W obecnej sytuacji obawiam się o swój stan zdrowia.</i> ]	Whole sample	4.15	1.81	5	1	7	–	–
		Students	4.1	1.82	4	1	7	7965	-0.59
		Working students	4.24	1.8	5	1	7		

*M* – mean; *SD* – standard deviation; *Me* – median; min. – minimum result obtained; max. – maximum result obtained; *U* – non-parametric U Mann–Whitney test of significance of differences

\* – salience level when  $p < 0.05$

Source: Authors' own study.

The main coping strategies have been qualified into 3 subscales: goal-oriented behaviour (10 items), negative emotions (8 items) and persistent negative thoughts (10 items). The responses have been given at seven-point Likert scale (1 – *I strongly disagree* and 7 – *I strongly agree*). The overall values for the groups of participants are presented in Table 2. The normality of distribution has been confirmed for goal-oriented behaviour of the whole group and students' results only.

Figure 1 presents the boxplot distribution of the results for the groups of participants. No statistical differences between groups have been observed neither in goal-oriented behaviour, negative emotions nor in persistent negative thoughts.

Gender bias was expected in negative emotions subscale. Higher values of all subscales have been observed within the female group (female: goal-oriented subscale  $M = 4.48$ ;  $SD = 0.7$ ; negative emotions  $M = 3.84$ ;  $SD = 1.02$ ; persistent negative thoughts  $M = 3.68$ ;  $SD = 0.95$ ; male: goal-oriented subscale  $M = 4.27$ ;  $SD = 0.76$ ; negative emotions  $M = 3.3$ ;  $SD = 0.92$ ; persistent negative thoughts  $M = 3.43$ ;  $SD = 0.79$ ). Further analysis including gender differences have been performed but due to the overrepresentation of women, the results should be treated with cautiousness. The significant differences have been observed within negative emotion subscale ( $U = 3566$ ;  $Z = -3.16$ ;  $p < 0.01$ ) and persistent neg-

Table 2. Descriptive statistics of the subscales for the groups of participants

Subscale	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Goal-oriented behaviour	Whole sample	4.44	0.72	4.54	1.82	6.27	–	–
	Students	4.48	0.68	4.54	2.27	6.27	7807	-0.84
	Working students	4.4	0.8	4.45	1.82	6.09		
Negative emotions	Whole sample	3.75	1.02	3.75	1.25	6.75	–	–
	Students	3.73	1.02	3.75	1.38	6.75	7902	-0.68
	Working students	3.77	1.01	3.75	1.25	6		
Persistent negative thoughts	Whole sample	3.63	0.93	3.6	1.2	6.7	–	–
	Students	3.62	0.92	3.6	1.7	6.7	8021.5	-0.49
	Working students	3.67	0.94	3.6	1.2	6.1		

*M* – mean; *SD* – standard deviation; *Me* – median; min. – minimum result obtained; max. – maximum result obtained; *U* – non-parametric U Mann–Whitney test of significance of differences

\* – salience level when  $p < 0.05$

Source: Authors' own study.

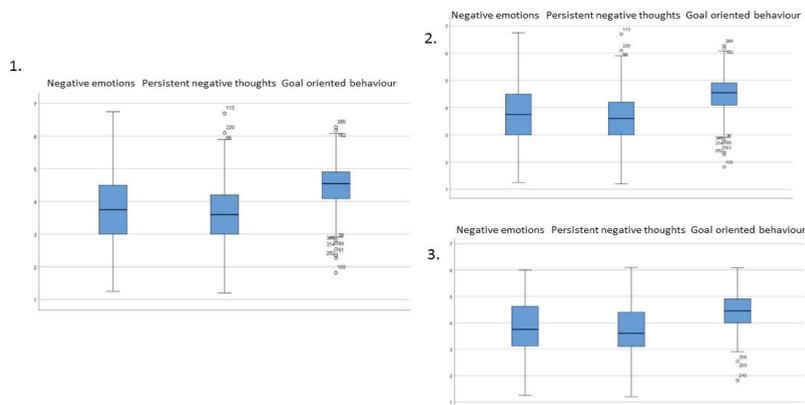


Figure 1. Distribution of the results for the groups of participants. 1 – whole group sample, 2 – students group sample, 3 – working students group sample

Source: Authors' own study.

ative thoughts ( $U = 4161.5$ ;  $Z = -1.93$ ;  $p = 0.05$ ). No statistical difference between groups has been observed in the case of goal-oriented behaviour ( $U = 4427$ ;  $Z = -1.37$ ;  $p = 0.17$ ). Women within the groups tended to report more intense negative emotions and more persistent negative thoughts but due to overrepresentation of women within the groups such result should be treated as a tendency.

Additionally to the above presented subscales, the questions about the physiological status have been asked. The physiological symptoms could be reported as manifestation of psychological stress (i.e. shaking hands, stomach-ache), underlined medical condition (i.e. fever, shortness of breath) or a combination of the two (i.e. tiredness, chest pain and muscle pain). The responses have been given on the 7-point scale (1. *Never*, 7. *Always*). The detailed analysis is presented in Table 3. It is worth mentioning that only three subjects have declared to be potentially ill.

Table 3. Detailed descriptive statistics of the items on physiological status

Item	Group	<i>M</i>	<i>SD</i>	<i>Me</i>	min	max	<i>U</i>	<i>Z</i>
Recently I feel: [ <i>W ostatnim czasie odczuwam</i> ]								
Chest pain and neck pain [ <i>Bóle w klatce piersiowej i karku</i> ]	Whole sample	1.97	1.48	1	1	7	7722.5	-1.09
	Students	1.88	1.39	1	1	7		
	Working students	2.13	1.63	1	1	7		
Stomach ache [ <i>Bóle brzucha</i> ]	Whole sample	2.08	1.36	2	1	6	8135.5	-0.32
	Students	2.02	1.27	2	1	6		
	Working students	2.19	1.52	2	1	6		
Fever [ <i>Gorączka</i> ]	Whole sample	1.21	0.69	1	1	6	7940.5	-1.1
	Students	1.22	0.67	1	1	6		
	Working students	1.2	0.73	1	1	5		
Shaking hands [ <i>Drżenie rąk</i> ]	Whole sample	1.6	1.18	1	1	7	8268.5	-0.1
	Students	1.54	1.1	1	1	6		
	Working students	1.7	1.38	1	1	7		
Problems with breathing [ <i>Duszności</i> ]	Whole sample	1.43	0.97	1	1	7	8013.5	-0.68
	Students	1.38	0.87	1	1	7		
	Working students	1.53	1.12	1	1	7		

Table 3 cont.

General muscle tension [ <i>Ogólne napięcie mięśni</i> ]	Whole sample	2.17	1.57	1	1	7	–	–
	Students	2.08	1.48	1	1	7	7828.5	-0.88
	Working students	2.34	1.71	1	1	6		
Digestion problems [ <i>Problemy żołądkowe</i> ]	Whole sample	1.99	1.44	1	1	6	–	–
	Students	1.89	1.32	1	1	6	7857	-0.85
	Working students	2.16	1.66	1	1	6		
Sensation of heat [ <i>Uderzenia gorąca</i> ]	Whole sample	1.49	1	1	1	6	–	–
	Students	1.48	0.97	1	1	5	8142	-0.38
	Working students	1.5	1.09	1		6		
Shortness of breath [ <i>Cięższy oddech</i> ]	Whole sample	1.65	1.22	1	1	7	–	–
	Students	1.59	1.12	1	1	7	8086	-0.47
	Working students	1.74	1.4	1	1	7		
Muscle pain [ <i>Bóle mięśni</i> ]	Whole sample	1.85	1.39	1	1	7	–	–
	Students	1.86	1.35	1	1	7	7840	-0.91
	Working students	1.83	1.45	1	1	6		
General tiredness and sleepiness [ <i>Zmęczenie i senność</i> ]	Whole sample	3.58	1.95	4	1	7	–	–
	Students	3.53	1.93	4	1	7	7888	-0.71
	Working students	3.69	1.98	4	1	7		
Total	Whole sample	1.91	0.8	1.73	1	4.82	–	–
	Students	1.86	0.7	1.73	1	4.45	8241	-0.13
	Working students	2	0.97	1.64	1	4.82		

*M* – mean; *SD* – standard deviation; *Me* – median; min. – minimum result obtained; max. – maximum result obtained; *U* – non-parametric U Mann-Whitney test of significance of differences

\* – salience level when  $p < 0.05$

Source: Authors' own study.

Normality of distribution have been confirmed for all the items within all the groups. There have been no statistically significant differences between the groups. Additional computation has been performed to verify the gender bias but due to the overrepresentation of women, the results should be treated with cautiousness. The statistically significant differences between women and men have been observed in reporting: stomach ache ( $U = 3934.5$ ;  $Z = -2.556$ ;  $p = 0.01$ ) and sensation of heat ( $U = 4212.5$ ;  $Z = -2.4$ ;  $p = 0.017$ ). At the level of tendency the differences have been reported in fever ( $U = 4621$ ;  $Z = -1.73$ ;  $p = 0.08$ ) and muscle pain ( $U = 4208.5$ ;  $Z = -2.12$ ;  $p = 0.08$ ). The information gathered has been calculated and treated as an index of somatisation connected with the increased psychological stress level.

The correlation between coping styles and somatization effect has been tested. The significant correlations within the whole sample between negative emotions and persistent negative thoughts has been observed ( $\tau = 0.70$ ;  $p < 0.001$ ) as well as persistent negative thoughts and goal-oriented behaviour ( $\tau = 0.094$ ;  $p < 0.05$ ). The significant correlation within the whole sample between somatization and negative emotions has been observed ( $\tau = 0.18$ ;  $p < 0.001$ ) as well as between somatization and persistent negative thoughts ( $\tau = 0.18$ ;  $p < 0.001$ ).

## DISCUSSION

The current study shows the adaptation process of the young adults to the demanding situation which is performing their everyday activities at the time of pandemic. The participants of the study show relatively constructive coping styles with higher goal-oriented behaviours recommended by the health agencies such as WHO and Ministry of Health. The current situation puts pressure on the participants. However, they introduce the efforts to maintain the balance between the uncertainty of their future and life goals. Low negative emotions ratio and low level of persisting negative thoughts observed within the sample indicate the effectiveness of the participants efforts.

The main coping strategies are similar within both groups of students. The only differences are connected to active social distancing from potentially infectious persons. The above may be associated with the more frequent contact with the persons from the outside-family circle due to the performance of work-related activities.

The gender distribution within the groups influenced the possibility of the results generalisation. Although, there is an observed tendency to more emotional and less constructive functioning (higher results in persistent thoughts subscale) within the female group. In addition, within the female group, higher somatization items were observed. As mentioned above, due to the overrepresentation of females, such results should be treated with cautiousness.

The observed characteristic of the coping styles is similar to the one observed in the natural disasters victims (Crum, Salovey, Achor, 2013). Due to the prolonged impact of the current pandemic on the functioning the young adults, the observed results should be discussed in relation to assets connected with the structure of the participants' generation. Introduction of the social distancing and on-line education is a demanding process, and the participants deal with it quite well. Relatively high percentage of the subjects declare the undertaken effort to learn new skills (49%) and devote more time to the closest relatives (48.3%). The reported results correspond with the general characteristic of the generation Y and Z (Murzyn, Nogiec, 2015; Kubacka-Jasiecka, 2014). The previously obtained technological fluency is taken advantage of by the students in case of multitasking digital activities on both academic and social level. The most important values for the generation Y and Z reported in the previous studies were: family, happiness and love (Murzyn, Nogiec, 2015). Most of the participants were preoccupied with the health status of their loved ones (89%), and older members of their families (88.9%). Most of the participants of the study are currently living with their parents or close families. Half of the sample declared to be in the romantic relationship. The closeness to the loved ones and receiving their support may be the protective factor of maintaining the healthy balance. The peer contacts have been restricted overnight. The remaining question is whether the digitalized form of peer contact will be sufficient and for how long.

The results of the study highlight the frailty of the population among the responders. Among them, the combination of higher negative emotions, persistent negative thoughts and less effective goal-oriented behaviours are observed. Such a trait is generally observed more in women than men. The following corresponds with the analysis performed with regard to generation Z (Bethune, 2019) which underline the increase in mental health reported issues by the young persons. In current situation of social isolation, increased health risk and lower sense of control, it is assumed that underlined mental conditions would intensify. Such a trend is observed worldwide (Lee, 2020; Viner et al., 2020; Liu et al., 2020; Moccia et al., 2020) as well as in the current study. The subgroup of students shows higher levels of negative emotions which should be followed. The social isolation may increase the problem by the lower chance of social exposition of the issue to the bystander.

One of the interesting findings of the study is the general low level of the physiological symptoms with rather outstanding results of the "general tiredness" item (32.6% participants declaring "rather frequent" to "constant [tiredness]"). The above corresponds with the responses to the survey "I feel less energy every day" (40.5% "rather agree" to "strongly agree"). The symptomatology of such a state is unknown and may be attributed to the mood swings indicating the sense of hopelessness, underlined medical conditions (possible mild COVID-19) or is

connected with the general loss of control. No statistical difference between students in terms of gender and status has been observed in these items.

## CONCLUSIONS

The weak population pinpointed in the study is particularly susceptible to mental health decline. The various channels of communication and good quality information system is necessary to provide sufficient support to the tackling young adults. The conditions such as anxiety disorders and depression may be dangerous for the frail population in current situation. In light of uncertainty of the future, close monitoring of the persons already diagnosed with mental health issues is a must. It is also recommended to inform general society on the possible channels of seeking the counselling and receiving mental support. It would be worth considering to introduce the way of communication with general public in order to identify persons who are potentially at risk.

## REFERENCES

- Andersen, K.G., Rambaut, A., Lipkin, W.I., Holmes, E.C., Garry, R.F. (2020). The proximal origin of SARS CoV-2. *Nature Medicine* 26, 450–452. doi:10.1038/s41591-020-0820-9
- Bethune, S. (2019, January). Gen Z more likely to report mental health concerns. The latest APA Stress in America™ Survey focuses on the concerns of Americans ages 15 to 21. *Monitor on Psychology*, 50(1). Retrieved from: <https://www.apa.org/monitor/2019/01/gen-z> (access: 20.04.2020).
- Biggs, A., Brough, P., Drummond, S. (2017). Lazarus and Folkman's Psychological Stress and Coping Theory. In: C.L. Cooper, J.C. Quick (eds.), *The Handbook of Stress and Health: A Guide to Research and Practice*, 1<sup>st</sup> ed. Wiley-Blackwell. Retrieved from: [onlinelibrary.wiley.com/doi/pdf/10.1002/9781118993811](http://onlinelibrary.wiley.com/doi/pdf/10.1002/9781118993811) (access: 20.04.2020).
- Brooks, S.K., Webster, R.K., Smith, L.E., Woodland, L., Wessely, S., Greenberg, N., Rubin, G.J. (2020). The psychological impact of quarantine and how to reduce it: Rapid review of the evidence. *The Lancet*, 395, 912–920. doi:10.1016/s0140-6736(20)30460-8
- CDC (2020). *COVID-19 Symptoms*. Retrieved from: <https://www.cdc.gov/coronavirus/2019-ncov/symptoms-testing/symptoms.html> (access: 20.04.2020).
- CBOS (2017). *Komunikat z badań nr 98/2017. Pełnoletnie dzieci mieszkające z rodzicami*.
- Crum, A.J., Salovey, P., Achor, S. (2013). Rethinking stress: The role of mindsets in determining the stress response. *Journal of Personality and Social Psychology*, 104, 716–733. doi:10.1037/a0031201.
- Fang, L., Karakiulakis, G., Roth, M. (2020). Are patients with hypertension and diabetes mellitus at increased risk for COVID-19 infection? *The Lancet Respiratory Medicine*, e21(8), 4. doi:10.1016/s2213-2600(20)30116-8
- GUS (2019). *Szkolnictwo wyższe w roku akademickim 2018–2019*.
- Heszen, I., Sęk, H. (2007). *Psychologia zdrowia*. Warszawa: PWN.
- Heszen, I. (2013). *Psychologia stresu. Korzystne i niekorzystne skutki stresu życiowego*. Warszawa: PWN.
- Huber, L. (2010). Style adaptacyjne do sytuacji stresowych w różnych grupach wiekowych, a choroby cywilizacyjne XXI wieku. *Problemy Higieny i Epidemiologii*, 91(2), 268–275.

- Hurwitz, T.A. (2004). Somatisation and conversion disorder. *The Canadian Journal of Psychiatry*, 49, 172–178. doi:10.1177/070674370404900304
- ICD-11. 6B00 Generalised anxiety disorder; 6B40 Post traumatic stress disorder. Retrieved from <https://www.icd.who.int/browse11/l-m/en> (access: 17.04.2020).
- Kraszewska-Orzechowska, A. (2007). Problem somatyzacji w przebiegu depresji i jej wpływ na zachowania osób dorosłych. *Annales Universitatis Mariae Curie-Skłodowska. Sectio J, Paedagogia-Psychologia*, 20, 151–162.
- Kubacka-Jasiecka, D. (2014). Dorastanie we współczesności. Postawy, wartości i doświadczanie czasu a kryzysy rozwoju pokolenia po transformacji. *Czasopismo Psychologiczne*, 20(2), 171–182.
- Lee, J. (2020). Mental health effects of school closures during COVID-19. *The Lancet Child & Adolescent Health*, (in press). doi:10.1016/s2352-4642(20)30109-7
- Liu, N., Zhang, F., Wie, C., (...), Liu, W. (2020). Prevalence and predictors of PTSS during COVID-19 outbreak in China hardest-hit areas: Gender differences matter. *Psychiatry Research*, 287, 112921. doi:10.1016/j.psychres.2020.112921.
- Moccia, L., Janiri, D., Pepe, M., (...), Di Nicola, M. (2020) Affective temperament, attachment style, and the psychological impact of the COVID-19 outbreak: An early report on the Italian general population. *Brain, Behavior, and Immunity*, (in press). doi:10.1016/j.bbi.2020.04.048
- Murzyn, M., Nogiec, J. (2015). Deklarowane wartości w opinii przedstawicieli wybranych pokoleń. *The Wrocław School of Banking Research Journal*, 15(1)(3).
- Nitsch, K., Jabłoński, M., Samochowiec, J., Kurpisz, J. (2015). Zaburzenia pod postacią somatyczną: problematyczne zjawisko – problematyczna diagnoza. *Psychiatria*, 12(2) 77–84.
- Pappas, G., Kiriaze, J., Giannakis P., Falagas, M. (2009). Psychosocial consequences of infectious diseases. *Clinical Microbiology and Infection*, 15(8), 743–747. doi:10.1111/j.1469-0691.2009.02947.x
- Rozporządzenie Ministra Nauki i Szkolnictwa Wyższego z dnia 11 marca 2020 r. w sprawie czasowego ograniczenia funkcjonowania niektórych podmiotów systemu szkolnictwa wyższego i nauki w związku z zapobieganiem, przeciwdziałaniem i zwalczaniem COVID-19 (Dz.U. poz. 405 z późniejszymi zmianami [Journal of Laws, pos. 405, as amended]).
- Shereen, M.A., Khan, S., Kazmi, A., Bashir, N., Siddique, R. (2020). COVID-19 infection: Origin, transmission, and characteristics of human coronaviruses. *Journal of Advanced Research*, 24, 91–98. doi:10.1016/j.jare.2020.03.005
- Slovic, P., Peters, E. (2006). Risk perception and affect. *Current Directions in Psychological Science*, 15(6), 322–325. doi:10.1111/j.1467-8721.2006.00461.x.
- Strong, P. (1990). Epidemic psychology: A model. *Sociology of Health & Illness*, 12(3), 249–259.
- Tian, F., Li, H., Tian, S., Yang, J., Shao, J., Tian, C. (2020). Psychological symptoms of ordinary Chinese citizens based on SCL-90 during the level I emergency response to COVID-19. *Psychiatry Research*, 288, 112992. doi:10.1016/j.psychres.2020.112992
- Viner, R.M., Russell S.J., Croker, H., (...), Booy, R. (2020). School closure and management practices during coronavirus outbreaks including COVID-19: a rapid systematic review. *The Lancet Child & Adolescent Health*, (in press). doi:10.1016/S2352-4642(20)30095-X
- WHO (2020a). *COVID-19 Classification Codes*. Retrieved from: [https://www.who.int/health-topics/coronavirus#tab=tab\\_3](https://www.who.int/health-topics/coronavirus#tab=tab_3) (access: 20.04.2020).
- WHO (2020b). *COVID-19 Symptoms*. Retrieved from: <https://www.who.int/classifications/icd/covid19/en/> (access: 20.04.2020).
- WHO (2020c). *Situation Report, 9 April 2020, SARS-CoV-2*. Retrieved from: [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200409-sitrep-80-covid-19.pdf?sfvrsn=1b685d64\\_6](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200409-sitrep-80-covid-19.pdf?sfvrsn=1b685d64_6) (access: 20.04.2020).

- WHO (2020d). *Situation Report, 9 April 2020, SARS-CoV-2*. Retrieved from [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200418-sitrep-89-covid-19.pdf?sfvrsn=3643dd38\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200418-sitrep-89-covid-19.pdf?sfvrsn=3643dd38_2) (access: 20.04.2020).
- Wu, Y., Xu, X., Chen, Z., Duan, J., Hashimoto, K., Yang, L., Liu, C., Yang, C. (2020). Nervous system involvement after infection with COVID-19 and other coronaviruses, *Brain, Behavior, and Immunity*, (in press). doi:10.1016/j.bbi.2020.03.031.
- Xydakis, M.S., Dehgani-Mobaraki, P., Holbrook, E.H., (...), Hopkins, C. (2020). Smell and taste dysfunction in patients with COVID-19. *The Lancet Infectious Diseases*, (in press). doi:10.1016/S1473-3099(20)30293-0
- Zhou, F., Yu, T., Du, R., (...), Cao, B. (2020). Clinical course and risk factors for mortality of adult inpatients with COVID-19 in Wuhan, China: A retrospective cohort study. *The Lancet*, 395(10229), 1054–1062. doi:10.1016/S0140-6736(20)30566-3

## STRESZCZENIE

Rozprzestrzenienie się wirusa SARS-CoV-2 było nieoczekiwane, również co do jego skutków. W marcu 2020 r. WHO wprowadziło stan pandemii. Społeczeństwa były zmuszone do dostosowania się do zagrażającej sytuacji. Zmiany mają oddźwięk na polach codziennych interakcji i edukacji, bardzo ważnych dla grupy badanej. W niniejszym artykule skupiono się na analizie obciążenia psychologicznego wśród młodych dorosłych. Do tego celu opracowano własne narzędzie badawcze. Pomiar dokonany na wstępnych danych doprowadził autorów do dwóch wniosków. Otóż odnotowano istnienie grupy szczególnie wrażliwej na negatywny wpływ pandemii. W tej grupie obserwuje się częstsze występowanie negatywnych emocji i uporczywych negatywnych myśli połączonych z somatyzacją. Te same dane sugerują, że większość badanych studentów cechuje się odpowiednią adaptacją w stosunku do sytuacji pandemii. Taki rezultat uzyskano przez wprowadzenie zachowań zorientowanych na cel, rekomendowanych przez międzynarodowe i krajowe organizacje zdrowotne.

**Słowa kluczowe:** emocja; zdrowie publiczne; stres psychologiczny; COVID-19