

Acknowledgments

The study was supported by an internal grant of The Authority for Research and Development of the Hebrew University of Jerusalem.

Disclosure statement

There are no conflicts of interest.


References

1. Atchison CJ, Bowman L, Vrinten C *et al.* Perceptions and behavioural responses of the general public during the COVID-19 pandemic: A cross-sectional survey of UK adults. *medRxiv*. 2020. <https://doi.org/10.1101/2020.04.01.20050039>
2. Kwok KO, Li KK, Chan HH *et al.* Community responses during early phase of COVID-19 epidemic, Hong Kong. *Emerg. Infect. Dis.* 2020; **26**: 1575–1579.
3. Webster RK, Brooks SK, Smith LE, Woodland L, Wessely S, Rubin GJ. How to improve adherence with quarantine: Rapid review of the evidence. *Public Health* 2020; **182**: 163–169.
4. Figner B, Weber EU. Who takes risks when and why? Determinants of risk taking. *Curr. Dir. Psychol. Sci.* 2011; **20**: 211–216.
5. Bjorner JB, Fayers P, Idler E. Self-Rated Health. In: Fayers PM, Hays RD (eds). *Assessing Quality of Life in Clinical Trials: Methods and Practice*, 2nd edn. Oxford University Press, Oxford, England, 2005; 309–324.
6. Kessler RC, Andrews G, Colpe LJ *et al.* Short screening scales to monitor population prevalences and trends in non-specific psychological distress. *Psychol. Med.* 2002; **32**: 959–976.
7. Kessler RC, Adler L, Ames M *et al.* The World Health Organization adult ADHD Self-Report Scale (ASRS): A short screening scale for use in the general population. *Psychol. Med.* 2005; **35**: 245–256.
8. Brann P, Lethbridge MJ, Mildred H. The young adult Strengths and Difficulties Questionnaire (SDQ) in routine clinical practice. *Psychiatry Res.* 2018; **264**: 340–345.
9. Shoham R, Sonuga-Barke E, Yaniv I, Pollak Y. ADHD is associated with a widespread pattern of risky behavior across activity domains. *J. Atten. Disord.* 2019. <https://doi.org/10.1177/1087054719875786>
10. Leung G, Lam T, Ho L *et al.* The impact of community psychological responses on outbreak control for severe acute respiratory syndrome in Hong Kong. *J. Epidemiol. Commun. Health* 2003; **57**: 857–863.

Supporting information

Additional Supporting Information may be found in the online version of this article at the publisher's web-site:

Appendix S1 Supporting information.

Yehuda Pollak, PhD ¹, Haym Dayan, MA,² Rachel Shoham, PhD³ and Itai Berger, MD 

¹The Seymour Fox School of Education, ²The Paul Baerwald School of Social Work and Social Welfare, The Hebrew University of Jerusalem, Jerusalem, and ³Special Education Department, Talpiot College, Holon, Israel

Email: yehuda.pollak@mail.huji.ac.il

Received 11 June 2020; revised 20 July 2020; accepted 22 July 2020.

Levels of stress and resilience related to the COVID-19 pandemic among academic medical staff in Serbia

doi:10.1111/pcn.13124

The pandemic nature of COVID-19 and the fear of being in contact with individuals who might be infected have led to significant stress and psychological pressure as well as stigmatization and discrimination worldwide.^{1–3} Some of the factors that further affect mental health in this context include poverty, access to health care, unemployment, life experiences, and social support,⁴ as well as the fact that the virus is an invisible and unfamiliar source of danger.⁵ In addition to worries about possible physical health consequences, mental health problems, such as a generalized sense of fear, anxiety, and stress, are becoming a widely discussed topic.⁶ One study found that, during the pandemic, a quarter of Chinese students showed symptoms of increased anxiety.¹ Another study found that medical staff exhibited greater levels of fear, anxiety, and depression than administrative staff.⁷ Even though stress reactions to the pandemic are normal and expected, reactions such as concentration problems, irritability, anxiety, insomnia, and interpersonal conflicts are also a common occurrence.⁴ Several studies have evaluated the severity of the fear of COVID-19,^{3,5} while other studies provide suggestions for improvement of certain protective factors, such as resilience.⁴

The aim of our study was to assess the potential relation between resilience (ability to cope with difficulties and recover from stress)⁸ and perceived levels of stress during the pandemic. This is a part of a broader study that evaluated stress, anxiety, depressiveness, and other symptoms in medical workers.

The first COVID-19 case in Serbia was diagnosed on 6 March 2020, while the state of emergency began on 15 March. The government mandated strict measures of social distancing, institutions and business were temporarily shut down, and preventive quarantine and lockdown were enforced from 18:00 hours until 05:00 hours. This part of the study was conducted online from 20 to 29 April on academic staff and students of medical sciences. The study protocol was approved by the Ethical Committee, Faculty of Medical Sciences, University of Kragujevac, and it conformed to the provisions of the Declaration of Helsinki.

The sample comprised of 420 students (female, 81.7%; $M_{\text{age}} = 22.53 \pm 3.65$ years) and 63 members of staff (female, 50.8%; $M_{\text{age}} = 41.70 \pm 10.92$ years) at the Faculty of Medical Sciences, University of Kragujevac, Serbia. The participants were asked to fill out basic sociodemographic data (age, sex, education, economic and marriage status, somatic/psychological difficulties, family history of mental disorders, smoking, alcohol and drug use); the Brief Resilience Scale (BRS),⁸ which showed satisfactory psychometric characteristics in our study ($\alpha = 0.79$); and the 21-item Depression, Anxiety, and Stress Scale (DASS-21) to evaluate the *perceived levels of stress* over the past 2 weeks ($\alpha = 0.84$).⁹ Informed consent was obtained from all participants included in the study and their anonymity was preserved.

Mean levels of stress were significantly higher, $t(481) = -3.17$, $P < 0.01$, in students (7.67 ± 4.67) than in staff (5.73 ± 4.22), as well as in female participants, $t(481) = -3.45$, $P < 0.001$. The levels of stress also increased with lower economic status. The majority of participants (57.3%) had no symptoms of stress, 26.7% had mild or moderate symptoms, while 15.9% had severe symptoms.

The mean difference in BRS score between staff (3.42 ± 0.75) and students (3.17 ± 0.80) was also significant, $t(481) = 2.35$, $P < 0.05$. Males reported higher scores on resilience, $t(481) = 4.30$, $P < 0.001$. One-third (33.3%) of participants showed lower levels of resilience, 56.7% showed medium levels, while only 10% showed higher levels. In both study groups, a moderate negative correlation between BRS scores and DASS-21 Stress scores was found ($\rho = -0.439$ for students, and $\rho = -0.339$ for staff).

After grouping all participants with stress symptoms (DASS-21 Stress score ≥ 8), multivariate binary logistic regression showed that older age (odds ratio [OR], 0.96) and better economic status (OR, 0.82) reduced the risk of stress, while being female (OR, 1.77) and having a family history of mental disorders (OR, 2.17) increased the stress. Finally, higher resilience scores reduced the risk of stress (OR, 0.36; see Table 1).

Our findings point towards several risk factors (younger, female academic medical workers with family history of mental disorders) for reporting higher levels of stress during the COVID-19 pandemic. Higher resilience is likely to be a protective factor. Considering the results of

Table 1. Multivariate binary logistic regression analyses of variables predicting stress symptoms

		B	SE	d.f.	Sig.	Exp(B)	95%CI for Exp(B)	
							Lower	Upper
Step 1	Age	-0.041	0.015	1	0.006**	0.959	0.932	0.988
	Sex	0.562	0.274	1	0.040*	1.754	1.025	3.002
	Economic status	-0.217	0.097	1	0.025*	0.805	0.666	0.973
	Family history of mental disorder	0.756	0.298	1	0.011*	2.129	1.187	3.817
	BRS	-1.045	0.146	1	0.000**	0.352	0.264	0.468
	Psychological difficulties	0.904	0.502	1	0.072	2.471	0.923	6.613
	Constant	3.400	0.872	1	0.000	29.973		
Step 2	Age	-0.044	0.015	1	0.003**	0.957	0.929	0.986
	Sex	0.568	0.275	1	0.039*	1.766	1.030	3.027
	Economic status	-0.201	0.098	1	0.040*	0.818	0.675	0.991
	Family history of mental disorder	0.775	0.298	1	0.009**	2.171	1.210	3.896
	BRS	-1.024	0.147	1	0.000**	0.359	0.269	0.480
	Constant	3.281	0.878	1	0.000	26.603		

** $P < 0.01$.

* $P < 0.05$.

BRS, Brief Resilience Scale; CI, confidence interval.

other studies in which medical health workers with somatic disorders, female workers, and workers in contact with COVID-19 patients were at higher risk of insomnia, anxiety, obsessive-compulsive, and depressive symptoms,¹⁰ we are aiming to present a more detailed analysis of protective factors in our future analyses.

Disclosure statement

There is no conflict of interest and funds were not received for this study.

References

1. Cao W, Fang Z, Hou G *et al*. The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Res.* 2020; **287**: 112934.
2. Lin C-Y. Social reaction toward the 2019 novel coronavirus (COVID-19). *Soc. Health Behav.* 2020; **3**: 1–2.
3. Ahorsu DK, Lin C-Y, Imani V, Saffari M, Griffiths MD, Pakpour AH. The Fear of COVID-19 Scale: Development and initial validation. *Int. J. Ment. Health Addict.* 2020. <https://doi.org/10.1007/s11469-020-00270-8>
4. Vinkers C, Amelsvoort T, Bisson J *et al*. Stress resilience during the coronavirus pandemic. *Eur. Neuropsychopharmacol.* 2020; **35**: 12–16.
5. Reznik A, Gritsenko V, Konstantinov V, Khamenka N, Isralowitz R. COVID-19 fear in Eastern Europe: Validation of the Fear of COVID-19 Scale. *Int. J. Ment. Health Addict.* 2020. <https://doi.org/10.1007/s11469-020-00283-3>
6. Centers for Disease Control and Prevention. Coronavirus disease 2019 (COVID-19): Stress and coping. [Cited 20 May 2020.] Available from URL: <https://www.cdc.gov/coronavirus/2019-ncov/daily-life-coping/mana-ging-stress-anxiety.html>
7. Lu W, Wang H, Lin Y, Li L. Psychological status of medical workforce during the COVID-19 pandemic: A cross-sectional study. *Psychiatry Res.* 2020; **288**: 112936.
8. Smith BW, Dalen J, Wiggins K, Tooley E, Christopher P, Bernard J. The Brief Resilience Scale: Assessing the ability to bounce back. *Int. J. Behav. Med.* 2008; **15**: 194–200.
9. Jovanović V, Gavrilov-Jerković V, Žuljević D, Brdarić D. Psychometric evaluation of the Depression Anxiety Stress Scales-21 (DASS-21) in a Serbian student sample. *Psihologija* 2014; **47**: 93–112.
10. Zhang WR, Wang K, Yin L *et al*. Mental health and psychosocial problems of medical health workers during the COVID-19 epidemic in China. *Psychother. Psychosom.* 2020; **89**: 242–250.

Dragana Ignjatović Ristić, MD, PhD,¹ Darko Hinić, PhD,² Dragić Banković, PhD,² Aleksandar Kočović, B Pharm,¹ Ivan Ristić, MD,³ Gvozden Rosić, MD, PhD,¹ Branko Ristić, MD, PhD,¹ Dragan Milovanović, MD, PhD,¹ Vladimir Janjić, MD, PhD,¹ Mirjana Jovanović, MD, PhD,¹ Dragica Selaković, MD, PhD,¹ Milena Jovičić, PhD,¹ Nebojša Stevanović, MD,⁴ Pavle Milanović,¹ Nemanja Milenković,¹ Milan Paunović, MD,¹ Ivana Stašević Karličić, MD, PhD,⁵ Ivona Novaković, MD,⁴ Jelena Aleksić, MD,⁴ Marija Drašković, MD,⁴ Nevena Randelović, MD,¹ Milan Đorđić, MD,¹ Jagoda Gavrilović, MD,¹
¹Faculty of Medical Sciences, ²Faculty of Sciences, University of Kragujevac, Kragujevac, ³Faculty of Medicine, University of Belgrade, Belgrade, ⁴Clinical Centre Kragujevac, Kragujevac, and ⁵Faculty of Medical Science, University of Priština, Kosovska Mitrovica, Serbia
 Email: dhinic@kg.ac.rs

Received 3 June 2020; revised 12 July 2020; accepted 28 July 2020.

Pre/post comparison study of emergency mental health visits during the COVID-19 lockdown in Lombardy, Italy

doi:10.1111/pcn.13126

Lombardy was the first and most severely affected Italian region to experience the COVID-19 pandemic.¹ A strict lockdown was enforced between 8 March and 3 May 2020, during which time public health authorities advised the population to limit their use of hospitals and emergency rooms (ER). Although previous evidence is lacking, patients with mental disorders may be less prone to comply with social distancing and preventive measures enforced during such a lockdown. Unlike the majority of other clinical services, mental health departments were required to continue their activity throughout the outbreak and to limit patients' access to hospitals through alternative outpatient interventions.²