Beata Hintze[1], Małgorzata Woźniak-Prus[2], Magdalena Gawrych[3], Andrzej Cudo[4]

Predyktory dystresu wśród pracowników uczelni wyższych w czasie pandemii COVID-19. Część II. Czynniki ochrony i ryzyka u kobiet i mężczyzn

Predictors of university staff distress during the COVID-19 pandemic.
Part II. Risk and protection factors in women and men

[1] Zakład Neuropsychologii i Neurobiologii, Instytut Psychologii, Akademia Pedagogiki Specjalnej im. Marii Grzegorzewskiej, Warszawa, Polska
[2] Katedra Psychologii Klinicznej Dziecka i Rodziny, Wydział Psychologii, Uniwersytet Warszawski, Warszawa, Polska
[3] Zakład Psychologii Człowieka Dorosłego, Instytut Psychologii, Akademia Pedagogiki Specjalnej im. Marii Grzegorzewskiej, Warszawa, Polska
[4] Katedra Psychologii Eksperymentalnej, Instytut Psychologii, Katolicki Uniwersytet Lubelski Jana Pawła II, Lublin, Polska
Adres do korespondencji: Beata Hintze, Zakład Neuropsychologii i Neurobiologii, Instytut Psychologii, Akademia Pedagogiki Specjalnej im. Marii Grzegorzewskiej, ul. Szczęśliwicka 40, 02-353 Warszawa, e-mail: bhintze@aps.edu.pl

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ORCID iDs
1. Beata Hintze https://orcid.org/0000-0003-1899-2143
2. Małgorzata Woźniak-Prus https://orcid.org/0000-0002-9851-7176
3. Magdalena Gawrych https://orcid.org/0000-0003-0668-5437
4. Andrzej Cudo https://orcid.org/0000-0001-7424-8576

Streszczenie

Wprowadzenie i cel: Analiza predyktorów ryzyka dystresu i ochrony w zakresie czynników socjodemograficznych oraz związanych z pandemią COVID-19 w grupie kobiet i mężczyzn pracujących na polskich uczelniach. **Materiał i metody:** W okresie od marca do sierpnia 2021 roku przeprowadzono badanie internetowe wśród 1015 pracowników uczelni wyższych w wieku 22–82 lata (*M* = 44,39 roku, *SD* = 11,4), w tym 68,3% kobiet. Wykorzystano częściowo ustrukturyzowane kwestionariusze dotyczące zmiennych socjodemograficznych, doświadczeń związanych z pandemią, stresorów wynikających z nauczania zdalnego oraz Skalę Depresji, Lęku i Stresu (Depression, Anxiety, and Stress Scale, DASS-21) do pomiaru zdrowia psychicznego. **Wyniki:** Regresja wielozmiennowa wykazała, że obciążenie pandemią ma istotne znaczenie dla nasilenia objawów lęku, depresji i stresu zarówno u mężczyzn, jak i kobiet. Tylko w grupie kobiet istotnym predyktorem nasilenia lęku i stresu był wiek badanych. Stwierdzono także różnicę między grupami dla związku między statusem nauczyciela akademickiego a stresem. Dla kobiet praca nauczyciela akademickiego była czynnikiem odpowiadającym za silniejsze odczuwanie ogólnego stresu. Bycie w związku stanowiło czynnik ochronny dla depresji w grupie kobiet. **Wnioski:** Zarówno dla kobiet, jak i mężczyzn najistotniejszymi czynnikami ryzyka pogarszania się zdrowia psychicznego były czynniki związane pośrednio i bezpośrednio z sytuacją pandemii: zmiany w życiu prywatnym w okresie pandemii, poczucie obciążenia pandemią, występowanie chorób przewlekłych. Z kolei za czynniki ochronne dla obu płci można uznać bliską relację (bycie w związku formalnym *vs* nieformalnym).

Słowa kluczowe: depresja, lęk, stres, pracownicy uczelni wyższych, COVID-19

Abstract

Introduction and objective: Analysis of distress risk and protective factors regarding sociodemographic and COVID-19 pandemic related factors in the group of women and men working at Polish universities. **Materials and methods:** From March to August 2021, an online survey was conducted among 1,015 university staff aged 22–82 (*M* = 44.39 years, *SD* = 11.4), including 68.3% women. The semi-structured questionnaire used in the study included sociodemographic data, pandemic experiences, stressors from remote teaching, and Depression, Anxiety, and Stress Scale (DASS-21) to measure distress. **Results:** Multivariate regression has shown that the pandemic burden is significant for the severity of anxiety, depression, and stress for both men and women. The age of the participants was a significant predictor of the severity of anxiety and stress only in the group of women. We also found the difference between the groups in the relationship between academic status and stress. For women, the work of an academic teacher was a strong stress factor responsible for a stronger feeling of general stress. Being in a relationship was a factor in protecting against depression in the group of women. **Conclusions:** For both women and men, the most critical risk factors for worsening mental well-being were factors directly and indirectly related to the pandemic situation: changes in private life during the pandemic, the feeling of pandemic burden, and the occurrence of chronic diseases. On the other hand, the protective factor for both males and females was a close relationship.

Keywords: depression, anxiety, stress, university staff, COVID-19

INTRODUCTION

The COVID-19 pandemic has evolved from a sudden and unpredictable stressful situation to a chronic issue. It has led to severe health problems; about 250 million people have been infected, and more than 5 million have died (World Health Organization, 2021). Across the world, societies have been experiencing mental health issues during the pandemic, particularly anxiety and depressive disorders (Shevlin et al., 2020).

Polish research conducted during the first wave of the pandemic shows that female gender and lack of full-time employment were associated with deterioration of mental health in terms of anxiety, stress, depression, and adaptive disorders (Dragan et al., 2021). These data, as well as other reports (Gambin et al., 2023), show high severity of stress-related symptoms in the early phase of the pandemic, which justifies further monitoring of mental health in the general population and in various professional groups.

Capturing risk factors for the deterioration of mental health will allow adapting therapeutic and preventive interactions to the needs of different groups.

The COVID-19 pandemic was associated with various stressors, which were also directly related to the nature of the work performed. It had an impact on the increase of emotional disorders and the deterioration of the mental health of teachers in schools and universities around the world, including Poland. Since the beginning of the pandemic, no research on the psychological distress of university staff in Poland has been published. However, data on the functioning of this professional group in other countries indicate an increase in mental health disorders (Besser et al., 2022). A similar trend is also observed in studies on the general population (Manchia et al., 2022).

As the psychiatric health care system is overloaded with current population needs, it is crucial to identify social groups that are particularly exposed to the development of mental disorders and implement ways to prevent the effects of chronic stress in times of protracted global crisis.

The part I of the article analyses the determinants of university staff's psychological distress by gender (Hintze et al., 2024). The results showed higher levels of anxiety experienced by women compared to men during the COVID-19 pandemic.

Significant risk factors for the worsening of psychological distress occurring in both genders included chronic disease and younger age. For men, an additional significant risk factor was the death of a loved one due to COVID-19. Higher levels of education (academic degree) and being in a relationship (married or informal) were found to be protective factors for both males and females. For women, an additional protective factor was living in a smaller city and being employed as an academic teacher. These data became the basis for in-depth analyses to identify critical risks and protective factors for the mental well-being of university staff by gender.

MATERIALS AND METHODS

Participants

A total of 1,015 university employees participated in the study, of which 989 individuals (675 women and 314 men) aged 22–82 years ($M = 44.39$ years, $SD = 11.4$) were included in the final sample due to lack of data (characteristics of the sample are presented in Tab. 1 in the part I of the paper – Hintze et al., 2024).

Procedure

The study was conducted online from March to August 2021 using the Google platform. With the consent of the university rectors, invitations to participate in the study were send to employees of various universities. Participation in the study was voluntary and anonymous. Additional information on the procedure is presented in the Method section in the part I of the article (Hintze et al., 2024).

Measures

The following methods were used in the study:
- Depression, Anxiety, and Stress Scale (DASS-21) (Lovibond and Lovibond, 1995) in Polish translation (Makara-Studzińska et al., 2020);
- Pandemic Burden Scale – own authorship;
- Sociodemographic Questionnaire – own authorship.

Details of the tools, together with their psychometric properties are described in the part I of the article (Hintze et al., 2024).

Statistical analysis

Based on the results of univariate regression analysis, variables were selected for multivariate regression analysis (with results presented in the part I of the article – Hintze et al., 2024). Only variables that were statistically significantly associated with depression, anxiety, and stress in univariate regression analysis were selected for multivariate regression analysis. Considering the strong correlation between age and the number of work years, only age was included in multivariate regression analysis. Moreover, the number of weeks of remote work from the beginning of September 2020 was excluded from multivariate regression analysis because of numerous data gaps and a weak association with depression only among male university staff. Lack of marital status – widowed and education – other in the male group resulted in excluding these categories from multivariate regression analysis.

For multivariate regression analysis, the assumption of homoscedasticity was tested using the Breusch–Pagan test for heteroscedasticity. Taking into account the violation of assumption of homoscedasticity in multivariate regression models [depression in female ($p < 0.001$) and male ($p = 0.003$) university staff; anxiety in female ($p < 0.001$)

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and male ($p < 0.001$) university staff; stress in female university staff ($p < 0.001$)], the regression equation with robust standard errors was applied. Only the assumption of homoscedasticity was confirmed for the regression models: stress in male university staff ($p = 0.681$). The residual autocorrelation was tested using the Durbin–Watson statistic. For the depression regression model, there was no autocorrelation (female group: d = 1.947; male group: d = 2.068). Similarly, autocorrelation was not found in the anxiety (female group: d = 1.864; male group: d = 2.044) and stress (female group: d = 1.840; male group: d = 2.302) regression model. The multicollinearity assumption was verified using the variable inflation factor (VIF). The results indicated that almost all values for the independent variables were below the multicollinearity threshold of 2 in each model. In this context, only some dummy variables had a VIF greater than 2 but lower than 2.5. However, Allison (2012) argued that high VIF was not a problem and could be safely ignored when the variables with high VIFs were dummy variables that representing a categorical variable with three or more categories. Consequently, there was no violation of the assumption of multicollinearity in each model.

Additionally, to compare beta coefficients among female and male university staff in multivariate regression models, the *z*-test described by Clogg et al. (1995) and Paternoster et al. (1998) was applied. The descriptive statistics, difference, and regression analyses were conducted using SPSS 27 with HeteroskedasticityV3 macro (Daryanto, 2020).

RESULTS

Looking at multivariate regression analysis results, depression was negatively associated with marital status, such as informal relationship ($B = -2.36$; $p < 0.001$) and being married ($B = -2.05$; $p < 0.001$) among the female group. Additionally, there was a positive relationship between suffering from chronic disease (Yes: $B = 1.79$; $p < 0.001$; Don't know: $B = 2.90$; $p = 0.019$), experiencing any significant changes in private life ($B = 1.52$; $p < 0.001$), pandemic burden ($B = 1.29$; $p < 0.001$) and depression among the female group. In the male group, depression was related to the pandemic stressor ($B = 1.25$; $p = 0.271$), experiencing any significant changes in private life ($B = 1.39$; $p = 0.022$), and pandemic burden ($B = 1.75$; $p < 0.001$). Detailed results are shown in Tab. 1. For the anxiety regression model, there was a positive relationship between suffering from chronic disease (Yes: $B = 1.73$; $p < 0.001$; Don't know: $B = 2.08$; $p = 0.035$), experiencing any significant changes in private life ($B = 1.19$; $p < 0.001$), pandemic burden ($B = 0.83$; $p < 0.001$), and anxiety among the female group. Additionally, age was negatively associated with anxiety in the female group ($B = -0.03$; $p = 0.043$). For the male group, anxiety was positively related to suffering from chronic disease (Yes: $B = 0.95$; $p = 0.034$), pandemic stressors ($B = 1.03$; $p = 0.010$), and pandemic burden ($B = 1.31$; $p < 0.001$). Detailed results are shown in Tab. 2. For the stress regression model, stress was positively related to academic teacher

status ($B = 1.32$; $p = 0.022$), chronic disease (Yes: $B = 1.69$; $p < 0.001$; Don't know: $B = 2.92$; $p = 0.010$), experience any significant changes in private life ($B = 1.43$; $p < 0.001$) and pandemic burden ($B = 1.71$; $p < 0.001$) among female university staff. Also, in this group, there was a negative relationship between age and stress ($B = -0.05$; $p = 0.007$). For male university staff, stress was associated with marital status: other ($B = 5.84$; $p = 0.026$), experiencing any significant changes in private life ($B = 1.73$; $p = 0.002$) and pandemic burden ($B = 2.07$; $p < 0.001$). Detailed results are shown in Tab. 3. Based on the *z*-test described by Clogg et al. (1995) and Paternoster et al. (1998), there was no statistically significant difference in beta coefficients between the female and male university staff for the depression regression model. However, both groups had a statistical difference in the relationship between pandemic burden and anxiety ($z = -2.00$; $p = 0.046$). This relation was stronger in the males ($B = 1.31$; $p < 0.001$) than in the females ($B = 0.83$; $p < 0.001$). Additionally, a difference was found between the two groups in the relationship between being an academic teacher and stress ($z = 2.40$; $p = 0.016$). This relation was statistically significant for female university staff ($B = 1.32$; $p = 0.022$) but insignificant for males ($B = -1.03$; $p = 0.192$). Detailed results are shown in Tabs. 1–3.

DISCUSSION

The results obtained in in-depth analyses confirmed different models of risk and protective factors for the deterioration of mental well-being in the groups of female and male university staff. In the group of women for the depression model, having a close relationship was a protective factor. Also, women had less severe symptoms of depression when they were in a formal or informal relationship. Women declared greater severity of depression symptoms when they had a chronic disease and experienced significant changes in their lives and a more substantial pandemic burden. In the model for anxiety in women, the risk factors appeared to be the same variables as in the model of depression and age. The younger the women, the stronger the anxiety they experienced. These results are consistent with the data from the early pandemic period, indicating a higher severity of anxiety in younger people in the general population (Gambin et al., 2023). For the stress model, the risk factors included the status of an academic teacher, the occurrence of chronic disease, the experience of significant changes in private life, and the pandemic burden. In all three models, the presence of chronic diseases and experiencing significant life changes during the pandemic and pandemic burden were particularly recurrent risk factors for increased depression, anxiety, and stress. These results coincide with those obtained by other researchers dealing with women's mental health, but in the general population during the pandemic (Bellizzi et al., 2022; Kumar et al., 2022). During the COVID-19 pandemic, there was an increased interest in the mechanisms responsible for mental health deterioration, as well as protective factors among women in

Variable	Category	Depression					
		Female (n = 675)		Male (n = 314)		Difference between female and male group	
		B	SE	B	SE	z	p
Work residence	Small city	−0.71	0.56	−0.55	0.91	−0.14	0.878
	Medium city	−0.05	0.45	−0.66	0.63	0.79	0.428
	Large city	−0.12	0.44	−0.79	0.70	0.82	0.417
	Other	2.95	2.85	−0.85	5.88	0.58	0.561
	Capital city – reference						
Marital status	Non-formal relationship	**−2.36*****	0.65	−1.01	0.85	−1.21	0.208
	Married	**−2.05*****	0.53	−0.51	0.68	−1.70	0.074
	Divorced	−1.35	0.76	0.27	1.97	−0.74	0.441
	Other	2.53	12.94	3.12	4.33	−0.04	0.965
	Single – reference						
Education	Secondary and post-secondary education	0.12	1.30	−1.53	1.37	0.83	0.385
	Doctorate degree	−0.06	0.61	0.03	0.79	−0.09	0.925
	Habilitation and professor degree	−0.71	0.69	−0.67	0.94	−0.03	0.975
	Bachelor and master degree – reference						
University status	Academic teacher	0.54	0.57	−1.36	0.96	1.69	0.089
	Other academic staff – reference						
Chronic disease	Yes	**1.79*****	0.38	1.09	0.58	1.01	0.312
	Don't know	**2.90***	1.23	3.18	1.88	−0.12	0.900
	No – reference						
Did any of your colleagues or students die due to COVID19? (0 – No; 1 – Yes)		−0.01	0.44	0.11	0.60	−0.15	0.877
Are you afraid of the negative consequences of being infected with COVID-19 (whether you have the disease or not)? (0 – No; 1 – Yes)		0.54	0.44	0.37	0.55	0.27	0.808
Pandemic has been stressing you the most recently (0 – No; 1 – Yes)		0.15	0.37	**1.25***	0.56	−1.62	0.102
During the last 3 months, did you experience any major changes in your private life? (0 – No; 1 – Yes)		**1.52*****	0.38	**1.39***	0.60	0.19	0.850
Age		−0.03	0.02	−0.04	0.03	0.48	0.598
Pandemic burden		**1.29*****	0.20	**1.75*****	0.25	−1.40	0.162
F		**9.75*****		**6.29*****			
R^2		**0.23**		**0.30**			
*** p < 0.001. ** p < 0.01. * p < 0.05.							

Tab. 1. Multivariate regression analysis results for depression among female and male university staff

different countries. Previous research has suggested that women during the pandemic may be more likely to develop mental disorders than men because they have higher initial levels of anxiety and depression (Hasin et al., 2018).

In the United States, low levels of resilience in women were associated with a higher risk of developing symptoms of depression, anxiety, and stress during the pandemic. Risk factors for low levels of resilience included younger age, lower income, lower education, unemployment, unmarried status, and a greater number of concurrent diseases (Kumar et al., 2022). An increase in suicide attempts in women and girls during the subsequent waves of the pandemic was noted in many countries, especially those with low and middle incomes (Bellizzi et al., 2022). Raising children was another a factor intensifying anxiety among women (Avery et al., 2021). In India, the pandemic has been shown to have caused significant income losses, increased food insecurity, and deterioration of mental health, especially among women (Bau et al., 2022). These reports suggest a significant vulnerability of the female gender to experiencing mental stress and developing mental disorders or going through

a mental crisis during the pandemic. For this reason, it is essential to study the risk and protection factors of psychological distress among women in various professions, as the consequences of the COVID-19 pandemic will be revealed or will persist in the coming years.

In the depression model in men, the risk factors turned out to include stress resulting from the pandemic, experiencing significant changes in private life, and the pandemic burden. In the anxiety model, the risk factors were the occurrence of chronic disease, stress resulting from the pandemic, and the pandemic burden. In the stress model, the risk factors comprised experiencing significant changes in private life and the pandemic burden. In all three models, the recurring risk factors included stress resulting from the pandemic, the experience of significant changes in private life during the pandemic, and the pandemic burden. These findings show that the experience of the pandemic and its consequences pose a severe threat to the mental well-being of men, even those protected by the factor of a high level of education (academic degree). The more men experienced pandemic stress and significant changes in their private lives, and the greater

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Variable	Category	Anxiety					
		Female (n = 675)		Male (n = 314)		Difference between female and male group	
		B	SE	B	SE	z	p
Work residence	Small city	−0.22	0.46	0.05	0.80	−0.29	0.774
	Medium city	0.61	0.39	−0.01	0.44	1.07	0.287
	Large city	0.09	0.39	0.29	0.55	−0.30	0.767
	Other	1.35	0.94	0.18	4.37	0.26	0.795
	Capital city – reference						
Marital status	Non-formal relationship	−0.10	0.54	−0.62	0.70	0.58	0.559
	Married	0.20	0.43	−0.38	0.55	0.83	0.409
	Divorced	−0.02	0.56	0.15	1.34	−0.12	0.906
	Other	−1.22	2.95	0.62	5.22	−0.31	0.759
	Single – reference						
Education	Secondary and post-secondary education	1.34	1.66	0.68	1.45	0.30	0.767
	Doctorate degree	−0.63	0.47	0.25	0.64	−1.12	0.261
	Habilitation and professor degree	−0.94	0.54	−0.52	0.70	−0.47	0.635
	Bachelor and master degree – reference						
University status	Academic teacher	0.65	0.44	0.18	0.67	0.59	0.557
	Other academic staff – reference						
Chronic disease	Yes	**1.73*****	0.33	**0.95***	0.44	1.40	0.161
	Don't know	**2.08***	0.98	0.89	1.62	0.63	0.530
	No – reference						
Did any of your colleagues or students die due to COVID19? (0 – No; 1 – Yes)		0.25	0.36	0.05	0.52	0.31	0.754
Are you afraid of the negative consequences of being infected with COVID-19 (whether you have the disease or not)? (0 – No; 1 – Yes)		0.56	0.33	0.49	0.41	0.14	0.888
Pandemic has been stressing you the most recently (0 – No; 1 – Yes)		0.23	0.31	**1.03***	0.40	−1.58	0.114
During the last 3 months, did you experience any major changes in your private life? (0 – No; 1 – Yes)		**1.19*****	0.30	0.48	0.47	1.27	0.203
Age		**−0.03***	0.02	−0.03	0.02	−0.12	0.902
Pandemic burden		**0.83*****	0.15	**1.31*****	0.19	−2.00	0.046
F		**7.74*****		**4.90*****			
R^2		**0.19**		**0.25**			
*** p < 0.001. ** p < 0.01. * p < 0.05.							

Tab. 2. Multivariate regression analysis results for anxiety among female and male university staff

the burden of the pandemic, the more severe their symptoms of depression, anxiety, and stress were. These results are consistent with those obtained in other studies aimed at assessing the psychological costs incurred by men during the pandemic reporting that 79% of men declared that COVID-19 pandemic had negatively affected their mental health (Ogrodniczuk et al., 2021). Subsequent studies showed that the increase in psychological distress in the group of Canadian men looking for help during the pandemic was associated with younger age and higher levels of anxiety before the pandemic. It was also noted that the more men experienced isolation due to the pandemic and lack of relationships/social contacts, the more severe the symptoms of depression and anxiety they experienced (Simpson et al., 2022). Published studies on the effects of the COVID-19 pandemic on men's overall health have shown that infection with the virus can negatively affect serum testosterone levels, fertility, sexual function, and mental health. It should also be considered that we still do not know all the adverse effects of the disease that may manifest themselves in the coming years (Dubin et al., 2022).

In-depth analyses have shown that risk factors have similar significance for the severity of depression symptoms in both female and male university staff. However, there was a statistical difference between the two groups in the relationship between the pandemic burden and anxiety. This relationship was stronger among men. These results suggest that the pandemic burden is more critical for intense anxiety symptoms in men (Hadar-Shoval et al., 2022; Jeong et al., 2023).

There was also a difference between the two groups in the relationship between academic status and stress. This relationship was statistically significant for women, suggesting that the work of an academic teacher was a vital stress factor for them, which was responsible for a stronger sense of general stress (Redondo-Flórez et al., 2020).

For male and female university staff, the most critical risk factors for the worsening of mental well-being and deterioration of mental health in terms of symptoms of depression, anxiety, and stress were factors related directly or indirectly to the pandemic situation: changes in private life during the pandemic, the pandemic burden, and chronic diseases. On the other hand, the protective factors for both genders

Variable	Category	Stress					
		Female (n = 675)		Male (n = 314)		Difference between female and male group	
		B	SE	B	SE	z	p
Work residence	Small city	−0.24	0.58	0.49	0.94	−0.66	0.511
	Medium city	0.36	0.46	0.22	0.59	0.17	0.861
	Large city	0.20	0.44	−0.11	0.66	0.39	0.699
	Other	1.07	1.99	0.42	3.08	0.18	0.860
	Capital city – reference						
Marital status	Non-formal relationship	−0.52	0.64	−0.22	0.87	−0.28	0.779
	Married	0.09	0.48	−0.12	0.71	0.25	0.801
	Divorced	−0.13	0.63	1.85	1.68	−1.10	0.271
	Other	4.79	7.26	5.84*	2.60	−0.14	0.891
	Single – reference						
Education	Secondary and post-secondary education	1.81	1.56	0.23	1.71	0.68	0.495
	Doctorate degree	−0.13	0.63	0.90	0.71	−1.08	0.279
	Habilitation and professor degree	−0.84	0.68	0.01	0.90	−0.75	0.450
	Bachelor and master degree – reference						
University status	Academic teacher	1.32*	0.58	−1.03	0.79	2.40	0.016
	Other academic staff – reference						
Chronic disease	Yes	1.69***	0.38	1.06	0.55	0.93	0.353
	Don't know	2.92*	1.13	−0.05	1.39	1.66	0.096
	No – reference						
Did any of your colleagues or students die due to COVID19? (0 − No; 1 − Yes)		0.28	0.44	0.13	0.60	0.20	0.838
Are you afraid of the negative consequences of being infected with COVID-19 (whether you have the disease or not)? (0 − No; 1 − Yes)		0.65	0.43	0.82	0.57	−0.24	0.808
Pandemic has been stressing you the most recently (0 − No; 1 − Yes)		0.42	0.38	0.99	0.52	−0.89	0.375
During the last 3 months, did you experience any major changes in your private life? (0 − No; 1 − Yes)		1.43***	0.37	1.73**	0.56	−0.45	0.649
Age		−0.05**	0.02	−0.04	0.03	−0.35	0.724
Pandemic burden		1.71***	0.20	2.07***	0.27	−1.05	0.292
F		10.79***		7.36***			
R²		0.27		0.33			
*** p < 0.001. ** p < 0.01. * p < 0.05.							

Tab. 3. Multivariate regression analysis results for stress among female and male university staff

can be considered a relationship (being in a formal vs. informal relationship) and – as shown by previous analyses – (see part I – Hintze et al., 2024) the obtained academic degree. A close relationship is essential for the availability of support. At the same time, an academic degree can be associated with more stable employment, better professional positions, more employment opportunities at other universities, fewer teaching hours, and greater independence.

CONCLUSION

The results of the study indicate that the pandemic burden was a significant predictor of depression, anxiety, and stress symptoms among university employees. Therefore, it would be worth proposing a preventive intervention for this group to develop coping and emotion regulation strategies. Such activities could counteract the development of mental disorders in this group of people, as well as enable them to support students who belong to the group reacting with the intensity of depression and anxiety during the pandemic (Gambin et al., 2023). Among university employees,

the group requiring more professional and individualised support consists of young women who have no close relationships. The isolation from remote work could deepen the negative consequences of a lack of close relationships. Therefore, it would be essential to offer this group of women therapeutic services to counteract the development of an affective disorder. A significant predictor of the severity of depression, anxiety, and stress symptoms during the COVID-19 pandemic, regardless of gender, is the presence of a chronic disease, which itself is a source of stress (Ziarko, 2014). The pandemic situation could additionally intensify the distress felt by this group. Therefore, chronically ill people should be the first group provided with mental health monitoring, as well as additional psychological support, not only due to the stress caused by the COVID-19 pandemic.

STUDY LIMITATIONS

The presented study had some limitations that should be considered when looking at the results obtained. The selection of the sample should be mentioned first. The study was

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voluntary, and even though the recruitment of participants was based on reaching the largest possible group of respondents from academic centres throughout the country, the examined sample may need to be more representative. Most of the participants were academic or scientific-didactic employees, with a much smaller participation of administrative staff, who also struggled and are still struggling with the effects of the pandemic related to the characteristics of their work. Second, the severity of anxiety, depression, or stress was measured only by self-reporting scales, sensitive to disturbances that cannot be controlled in this type of study (Podsakoff et al., 2003). Thirdly, the presented study was cross-sectional, which allows only for detecting significant relationships between the measured variables and predicting one variable based on another at a given moment. In order to assess the time stability of the observed relationships, it is necessary to conduct further studies.

Conflict of interest

The authors do not report any financial or personal connections with other persons or organizations which might negatively affect the contents of this publication and/or claim authorship rights to this publication.

Author contributions

Original concept of study: BH, MWP, MG. Collection, recording and/or compilation of data: BH, MG. Analysis and interpretation of data: BH, MWP, AC. Writing of manuscript: BH, MWP. Critical review of manuscript: MG, AC. Final approval of manuscript: BH.

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