ORIGINAL ARTICLE

THE INFLUENCE OF OCCUPATIONAL STRESS ON EMPLOYEES' MENTAL HEALTH

DOI: 10.36740/WLek202111124

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ABSTRACT

The aim: To identify the features of the influence of occupational stress on occupation-specific indicators of employees' mental health.

Materials and methods: In total, 771 skilled Russian-speaking respondents (226 men, 545 women; aged 18–67 years, M = 32.32 ± 12.28 years) from different countries and representing various professions participated in a remote online survey. Occupational stress intensity was assessed using the Russian adaptations of the Organizational Constraints Scale, Quantitative Workload Inventory and Aggressive Experiences Scale. Occupation-specific indicators of employees' mental health were assessed using the Russian adaptations of the Maslach Burnout Inventory, Withdrawal Scale and Negative Affect at Work Scale.

Results: The results showed a significant negative influence of occupational stress on occupation-specific indicators of employees' mental health. All three indicators of occupational stress showed strong significant correlations ($p < .001$; $r = .16–.60$) with all five occupation-specific indicators of negative mental health. Constraints on performance at work had the greatest negative influence on employees' mental health, followed by aggressive experiences and workload. Constraints on performance at work caused withdrawal behaviors and workload caused emotional exhaustion, personal accomplishment and withdrawal behaviors in men significantly more often than in women. Aggressive experiences caused depersonalization and negative affect at work in women significantly more often than in men.

Conclusions: Occupational stress had a significant negative influence on all occupation-specific indicators of employees' mental health. This influence had pronounced gendered characteristics. These results convincingly demonstrate the need for effective measures to prevent occupational stress.

KEY WORDS: mental health, burnout, aggressive experiences, workload, withdrawal behaviours, hardiness

Wiad Lek. 2021;74(11 p.I):2818-2822

INTRODUCTION

Occupational stress is one of the most significant problems for employees of various professions around the world [1, 2]. It is a global phenomenon with significant negative consequences for employees' health and organizations' economic success [3, 4]. In the most general sense, occupational stress refers to a sense of psychological pressure arising from different stressors experienced at work [5]. It is also generally defined as the gradual process by which individual cognitive assessments of occupational stressors generate adverse effects on health with severe behavioral consequences [4]. Employees are affected by stress regardless of profession, gender, age and financial or social status [2].

The main factors causing occupational stress can, in our opinion, be divided into three groups: 1) social (role ambiguity [6], low social support, poor psychosocial or unsafe climate, bullying [7]); 2) organizational (promotion; downsizing; wages [6]; lack of information; extreme pressure; low decision-making latitude [4]; effort–reward imbalance; low job control; job insecurity; organizational change; low organizational, procedural or relational justice [7]); and 3) occupational (temperature, noise, work overload [6], high job demands, atypical working hours [7]). These workplace factors can cause employees multiple stress-related mental health problems, including burnout [7–10], anxiety and depression [4, 11], lower self-esteem, somatization, negative impacts on social relationships [11], high work–family conflicts [3], job dissatisfaction, aggression, fatigue, substance abuse, poor performance [12] and lowered psychological well-being [4]. Because emotionally and physically demanding work with little control over one's work situation is especially stressful [12], occupational stress can have particularly pronounced negative effects on employees' mental health during work in extreme environments [11, 13–15].

In light of the above, protecting employees' mental health is an extremely important task [16–18]. However, as Akerstrom M. [7] has rightly noted, although numerous studies have described the prevalence and determinants of various mental health problems attributable to poor working conditions, there remains only limited knowledge of effective methods for improving these adverse conditions (and consequently employees' mental health). Moreover, although there is significant research interest in explaining the link between stress and mental health [4], occupation-specific

changes in employees' mental health and gendered patterns in the characteristics of such changes remain insufficiently studied in previous work.

THE AIM

The aim of our study was to identify the features of the influence of occupational stress on occupation-specific indicators of employees' mental health.

MATERIAL AND METHODS

Measures: The intensity of participants' occupational stress was assessed using the Russian adaptations of three measures: the Organizational Constraints Scale (OCS), Quantitative Workload Inventory (QWI) and Aggressive Experiences Scale (AES).

The OCS (Spector P. E., Jex S. M. [19]) is intended to measure constraints on performance at work (e.g. faulty equipment, incomplete information). One item assesses each of 11 constraint areas, all of which are summed into a total score. Respondents are asked to indicate how often it is difficult or impossible to do their jobs because of each item. Response choices range from *less than once per month or never* (coded as 1) to *several times per day* (coded as 5). High scores represent high levels of constraints, with the possible span of scores ranging from 11 to 55.

The QWI (Spector P. E., Jex S. M. [19]) is intended to assess amount of work and work pace (as opposed to qualitative workload, which indicates the difficulty of work). The QWI has five items. Respondents are asked to select how often each statement occurs from five response choices, ranging from *less than once per month or never* (coded as 1) to *several times per day* (coded as 5). High scores represent a high workload, with a possible range from 5 to 25.

The AES (Glomb T. M., Liao H. [20]) assesses the frequency with which respondents engage in and are the targets of aggressive behaviors at work. The scale consists of two separate 20-item subscales. For each subscale, respondents indicate whether they engaged in the aggressive behavior described (AES – engaged in) and whether they were the target of the aggressive behavior (AES – target). Respondents are asked to report the frequency of each of the 20 behaviors (e.g. yelling or raising one's voice, swearing at another person, spreading rumors) using a five-point scale (1 = *never*, 5 = *once a week or more*). Possible AES scores range from 20 to 100.

Occupation-specific indicators of employees' mental health (namely, 'negative mental health', which corresponds to the specific purpose of our study) were also assessed using the Russian adaptations of three measures: the Maslach Burnout Inventory – General Survey (MBI-GS), Withdrawal Scale (WS) and Negative Affect at Work Scale.

The MBI-GS (Maslach C. et al. [21]) is a psychological assessment instrument comprising 22 symptom items revealing occupational burnout. The measure contains three subscales: emotional exhaustion (EE; nine items), depersonalization (DP; five items), and personal accomplishment (PA; eight items). All MBI-GS items are scored on a seven-point Likert scale measuring frequency (0 = *never*, 1 = *several times a year or less often*, 2 = *once a month or less often*, 3 = *several times a month*, 4 = *once a week*, 5 = *several times a week*, 6 = *every day*). Higher scores on each subscale indicate higher results for each construct.

The WS (Mitchell M.S. [22]) is an eight-item measure that asks respondents to indicate the frequency with which they engaged in withdrawal behaviors involving the tasks they perform for their job over the course of the previous year (1 = *never*, 2 = *once a year*, 3 = *twice a year*, 4 = *several times a year*, 5 = *monthly*, 6 = *weekly*, 7 = *daily*). Example items include 'I began to do less work' and 'I put less effort into my assigned job duties'.

The Negative Affect at Work Scale (Watson D. et al. [23]) is one of two subscales of the Positive and Negative Affect Schedule – Trait (PANAS). The subscale contains 10 items that assess a person's negative mood or emotion using a five-point scale (1 = *very slightly or not at all*, 5 = *extremely*). Example items include 'How often do you feel scared at work?', 'How often do you feel upset at work?' and 'How often do you feel nervous at work?'

Data collection: We conducted a remote online survey using the website http://hr-test.org.

Participants: A total of 2,122 skilled Russian-speaking respondents from different countries and representing various ages and professions participated in the remote online survey. Only 771 respondents (226 men, 545 women; aged 18–67 years, $M = 32.32 \pm 12.28$ years) filled out all proposed questionnaires and were thus ultimately selected for data processing.

Ethics: The author asserts that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation and with the Helsinki Declaration of 1975, as revised in 2008. All participants were informed that their participation in the study was voluntary and that they could refuse to participate in or withdraw from the study at any time. Participants were informed that there were no right or wrong answers and were encouraged to respond candidly. Complete confidentiality was assured. Only de-identified data were used in the statistical analysis. We recorded only general data about respondents, such as gender, age and profession. Participants were motivated to participate in the study by the automatic presentation of their results, which was accompanied by a psychological and professional interpretation.

Statistical analysis: The SPSS software (version 22.0.0) was used to conduct the statistical analysis. Descriptive statistics (means and standard deviations), independent sample *t*-tests and Pearson's correlation coefficient were used to analyses the data. The data were normally distributed according to the one-sample Kolmogorov–Smirnov test.

RESULTS

Both the general and gendered characteristics of the influence of occupational stress on occupation-specific

Table I. Correlations between indicators of participants' occupational stress intensity and mental health (N = 771)

Indicators of occupational stress	Indicators of mental health				
	Emotional exhaustion	Depersonalisation	Personal accomplishment	Withdrawal behaviours	Negative affect at work
Constraints on performance at work	.46	.45	.54	.38	.60
Workload	.17	.20	.25	.16	.38
Aggressive experiences	.34	.28	.38	.36	.55

Note: p < .001 for all correlations.

Table II. Comparison of the indicators of men's and women's occupational stress intensity and mental health

Indicators of participants' occupational stress intensity and mental health	Results				t	p <
	Men		Women			
	M	SD	M	SD		
Constraints on performance at work	23.35	9.50	23.30	9.68	.03	-
Workload	12.80	4.77	14.59	5.54	-2.17	.05
Aggressive experiences	70.45	29.56	70.66	26.40	-.05	-
Emotional exhaustion	43.95	25.57	48.89	26.73	-1.45	-
Depersonalisation	56.67	21.62	57.90	22.06	-.43	-
Personal accomplishment	41.28	26.39	46.76	27.21	-1.54	-
Withdrawal behaviours	26.46	10.89	26.49	11.60	-.01	-
Negative affect at work	21.32	8.68	22.33	8.68	-.63	-

Table III. Correlations between indicators of men's occupational stress intensity and mental health

Indicators of occupational stress	Indicators of mental health				
	Emotional exhaustion	Depersonalisation	Personal accomplishment	Withdrawal behaviours	Negative affect at work
Constraints on performance at work	.48***	.38***	.61***	.66***	.53***
Workload	.30***	.18**	.40***	.29***	.32***
Aggressive experiences	.33***	.16*	.46***	.48***	.38***

*p < .05. **p < .01. ***p < .001.

Table IV. Correlations between indicators of women's occupational stress intensity and mental health (N = 545)

Indicators of occupational stress	Indicators of mental health				
	Emotional exhaustion	Depersonalisation	Personal accomplishment	Withdrawal behaviours	Negative affect at work
Constraints on performance at work	.46***	.47***	.52***	.30***	.62***
Workload	.14**	.21***	.20***	.12**	.40***
Aggressive experiences	.33***	.31***	.35***	.32***	.58***

**p < .01. ***p < .001.

indicators of employees' mental health were determined by analyzing the correlations between indicators of participants' occupational stress intensity and their mental health. The correlations obtained for the sample are presented in Table I.

The data show significant correlations (p < .001; r = .16–.60) between all occupational stress indicators and all mental health indicators. The indicators of negative mental health were most strongly correlated with the occupational stress indicator constraints on performance at work (r = .38–.60). Aggressive experiences (r = .28–.55) had weaker correlations, and workload (r = .16–.25) had the comparatively weakest correlations.

Before comparing correlations between indicators of occupational stress and mental health in men and women, we compared all indicators for these two subsamples (Table II). This comparison showed that indicators of occupational stress and mental health did not differ significantly between

men and women except for workload, which was slightly higher in women ($p < 0.05$).

Correlations between the indicators of men's and women's occupational stress and mental health are presented in Tables III and IV.

The results show that constraints on performance at work were much more strongly correlated with withdrawal behaviors in men ($r = .66$) than in women ($r = .30$). In addition, workload's correlations with emotional exhaustion ($r = .30$ vs $r = .14$), personal accomplishment ($r = .40$ vs $r = .20$) and withdrawal behaviors ($r = .29$ vs $r = .12$) were twice as strong in men than in women. In turn, the correlations of aggressive experiences with depersonalization ($r = .31$ vs $r = .16$) and negative affect at work ($r = .29$ vs $r = .12$) were significantly stronger in women than in men.

DISCUSSION

The results show that occupational stress had a significant negative influence on occupation-specific indicators of employees' mental health, as evidenced by the strong significant correlations ($p < .001$; $r = .16–.60$) among all three occupational stress indicators used in the study and all five occupation-specific indicators of negative mental health. The occupational stress indicator with the greatest negative influence on employees' mental health was constraints on performance at work. Aggressive experiences had somewhat less influence, and workload had comparatively the least.

In general, these results are quite expected. A study by Malik N. A. and Björkqvist K. [12] revealed that the occupational stress indicator of workplace bullying had a significant effect on stress symptoms. Wilke D. J. et al. [24] reported occupational stress effects for child welfare workers including deteriorated physical and emotional well-being. Monteiro S. et al. [6] found, as in our study, that occupational stress had a sorely negative impact on journalists. Ukil M. I. and Ullah M. S. concluded [2] that occupational stress had a significant negative impact on bank employees' life satisfaction and work–life balance, as well as job performance and job satisfaction. The only somewhat unexpected result in our study was that all three examined occupational stress indicators had significant negative influences on all five mental health indicators.

In addition, our findings revealed that, although there were no differences between men and women in the indicators assessed in our study, the influence of occupational stress on employees' mental health had quite pronounced gendered characteristics. Among men, constraints on performance at work caused withdrawal behaviors and higher workload caused emotional exhaustion, personal accomplishment and withdrawal behaviors to a much greater extent (twice as much or higher) than in women. Among women, aggressive experiences were significantly more likely to cause depersonalization and negative affect at work than in men. Regarding gender differences in occupational stress, we can refer only to a study by Carvalho V. S. et al. [17], which revealed that work–family conflict was more likely to cause deterioration in mental health for women than for men.

The results obtained in our study convincingly demonstrate the need for effective measures to prevent causes of occupational stress (for example, constraints on performance at work, aggressive experiences and workload) that consequently damage employees' mental health. Studies by Monteiro S. et al. [6], Chitra T. and Karunanidhi S. [25] and Brough P. and Boase A. [26] have yielded similar recommendations.

In this context, Demou E et al. [11] have noted that workplace interventions to protect employees' mental health should be implemented not only at the *organizational level*, targeting working conditions and policies, but also at the *individual level*, through programmes on stress management and skills training that can provide employees with the tools and resources to cope with work-related problems. In particular, a promising area for such workplace interventions is measures aimed at strengthening employees' hardiness [27]. However, only a few studies have been conducted in this area (related to strengthening the hardiness of service members [28, 29] and police officers [25]), so this question remains quite open.

CONCLUSIONS

Our study showed that occupational stress had a significant negative influence on all occupation-specific indicators of employees' mental health. This influence had pronounced gendered characteristics. Constraints on performance at work had the greatest influence, aggressive experiences a somewhat weaker influence and workload comparatively the least influence. The obtained results convincingly demonstrate the need for effective measures to prevent occupational stress. A promising area for workplace interventions is measures to strengthen employees' hardiness.

REFERENCES

1. Nakao M. Work-related stress and psychosomatic medicine. BioPsychoSocial Medicine. 2010;4:4–11. doi: 10.1186/1751-0759-4-4.
2. Ukil M.I., Ullah M.S. Effect of occupational stress on personal and professional life of bank employees in Bangladesh: Do coping strategies matter. Journal of Psychological and Educational Research. 2016;24(2):75–100.
3. Yousaf S., Rasheed M.I., Hameed Z. et al. Occupational stress and its outcomes: the role of work-social support in the hospitality industry. Personnel Review. 2020;49(3):755–773. doi: 10.1108/PR-11-2018-0478.
4. Moreno Fortes A., Tian L., Huebner E.S. Occupational stress and employees complete mental health: a cross-cultural empirical study. International journal of environmental research and public health. 2020;17(10):3629. doi: 10.3390/ijerph17103629.
5. Karasek R., Theorell T. Healthy work: Stress, Productivity, and the Reconstruction of Working Life. New York: Basic Books. 1990, 102p.
6. Monteiro S., Marques P.A., Roberto M.S. Job demands, coping, and impacts of occupational stress among journalists: A systematic review. European Journal of Work and Organizational Psychology. 2016;25(5):751–772. doi: 10.1080/1359432X.2015.1114470.

7. Akerstrom M., Corin L., Severin J. et al. Can working conditions and employees' mental health be improved via job stress interventions designed and implemented by line managers and human resources on an operational level? International Journal of Environmental Research and Public Health. 2021;18(4):1916. doi: 10.3390/ijerph18041916.
8. Simoni P.S., Paterson J.J. Hardiness, coping, and burnout in the nursing workplace. Journal of Professional Nursing. 1997;13(3):178–185. doi: 10.1016/S8755-7223(97)80069-5.
9. Chan D.W. Hardiness and its role in the stress-burnout relationship among prospective Chinese teachers in Hong Kong. Teaching and Teacher Education. 2003;19(4):381–395. doi: 10.1016/S0742-051X(03)00023-4.
10. Azeem S.M. Personality hardiness, job involvement and job burnout among teachers. International Journal of Vocational and Technical Education. 2010;2:36–40.
11. Demou E., Hale H., Hunt K. Understanding the mental health and wellbeing needs of police officers and staff in Scotland. Police practice & research: an international journal. 2020;21(6):702–716. doi: 10.1080/15614263.
12. Malik N.A., Björkqvist K. Workplace bullying and occupational stress among university teachers: mediating and moderating factors. Europe's Journal of Psychology. 2019;15(2):240–259. doi: 10.5964/ejop.v15i2.1611.
13. Flaherty M.P., Sikorski E., Klos L. et al. Peacework and mental health: From individual pathology to community responsibility. Intervention. 2020;18(1):28–36. doi: 10.4103/INTV.INTV_59_18.
14. Kokun O., Bakhmutova L. Dynamics of indicators of expeditioners' psvcholooical states during long Antarctic stay. International Journal of Psychology & Psychological Therapy. 2020;20(1):5–12.
15. Kokun O., Agayev N., Pischko I. et al. Characteristic impacts of combat stressors on posttraumatic stress disorder in Ukrainian military personnel who participated in the armed conflict in eastern Ukraine. International Journal of Psychology & Psychological Therapy. 2020;20(3):315–326.
16. Martin A., Karanika-Murray M., Biron C. et al. The psychosocial work environment, employee mental health and organizational interventions: improving research and practice by taking a multilevel approach. Stress and Health. 2016;32(3):201-215. doi: 10.1002/smi.2593.
17. Carvalho V.S., Chambel M.J., Neto M. et al. Does work-family conflict mediate the associations of job characteristics with employees mental health among men and women?. Frontiers in Psychology. 2018;9:966. doi: 10.3389/fpsyg.2018.00966.
18. Vus V., Omelchenko L. Interdependent: mental health, social development, youth' socially oriented activity (on the example of a country in transition). Mental Health: Global Challenges Journal. 2018;1(1):86. doi: 10.32437/mhgcj.v1i1.37.
19. Spector P.E., Jex S.M. Development of four self-report measures of job stressors and strain: Interpersonal Conflict at Work Scale, Organizational Constraints Scale, Quantitative Workload Inventory, and Physical Symptoms Inventory. Journal of Occupational Health Psychology. 1998;3(4):356–367. doi: 10.1037/1076-8998.3.4.356.
20. Glomb T.M., Liao H. Interpersonal aggression in work groups: Social influence, reciprocal, and individual effects. Academy of Management Journal. 2003;46(4):486–496. doi: 10.2307/30040640.
21. Maslach C., Jackson S.E., Leiter M.P. Maslach Burnout Inventory manual (4th ed.). Menlo Park: Mind Garden, Inc.. 2017, 245p.
22. Mitchell M.S. Understanding Employees Behavioral Reactions to Aggression in Organizations (Doctoral dissertation). Orlando: University of Central Florida. 2006, 413p.
23. Watson D., Clark L.A., Tellegen A. Development and validation of brief measures of positive and negative affect: the PANAS scales. Journal of Personality and Social Psychology. 1988;54(6):1063–1070. doi: 10.1037//0022-3514.54.6.1063.
24. Wilke D.J., Randolph K., Olson C. Examining occupational stress in early-career child welfare workers. Journal of Workplace Behavioral Health.. 2020;35(3):158–174. doi: 10.1080/15555240.2020.1807354
25. Chitra T., Karunanidhi S. The impact of resilience training on occupational stress, resilience, job satisfaction, and psychological well-being of female police officers. Journal of Police and Criminal Psychology. 2018;36:8–23. doi: 10.1007/s11896-018-9294-9.
26. Brough P., Boase A. Occupational stress management in the legal profession: Development, validation, and assessment of a stress-management instrument. Australian Journal of Psychology. 2019;71(3):273–284. doi: 10.1111/ajpy.12244.
27. Kobasa S., Hilker R.R.J., Maddi S. Who stays healthy under stress? Journal of Occupational Medicine. 1979;21(9):595–598.
28. Escolas S.M., Pitts B.L., Safer M.A. et al. The protective value of hardiness on military posttraumatic stress symptoms. Military Psychologyıo 2013;25(2):116–123. doi: 10.1037/h0094953.
29. Hystad S.W., Olsen O.K., Espevik R. et al. On the stability of psychological hardiness: a three-year longitudinal study. Military Psychology. 2015;27(3):155–168. doi: 10.1037/mil0000069.

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Conflict of interest:

The Authors declare no conflict of interest.

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Received: 01.06.2021
Accepted: 14.10.2021

A – Work concept and design, **B** – Data collection and analysis, **C** – Responsibility for statistical analysis, **D** – Writing the article, **E** – Critical review, **F** – Final approval of the article