

The influence of psychosocial factors on distress expression

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A – Study Design, **B** – Data Collection, **C** – Statistical Analysis, **D** – Data Interpretation, **E** – Manuscript Preparation, **F** – Literature Search, **G** – Funds Collection

Summary Background. Psychosocial stress is a cause of illness and can lead to behavioral changes that tend to be harmful to health. Stress at work can cause burnout and damage workers' well-being and health. Timely diagnosis of distress symptoms can help ensure the quality of a worker's life.

Objectives. The aim of the study was to identify the stress prevalence and its expression and to reveal the influence of psychosocial factors.

Material and methods. A community-based cross-sectional study was conducted in a sample of 606 current workers of Klaipėda, Lithuania, who had no history of clinical diagnosed disease. The General Symptoms Distress Scale (GSDS) was used for distress evaluation.

Results. Overall stress intensity in the study group was moderate. Anxiety, fatigue, pain, sleep difficulties, and concentration difficulties are the most common distress symptoms depending on workers' gender, education, work experience, nature of work, insufficient rest, and some work related stress factors. Occupation, working hours per day, and health-related behavioral factors have no correlation with the distress symptoms.

Conclusions. Overall stress intensity in the study group was 6 (out of 10). According to the GSDS, the mean number of distress symptoms was 3,8 (out of 13), the intensity of these was 4,6 (out of 10), and management was 6,1 (out of 10). Female gender, education, less work experience, sedentary nature of work, and insufficient rest are the factors positively associated with having more distress symptoms. Hazardous environmental conditions, competition and career growth, deadlines, meeting the public, hazards encountered, and physical demands influence the expression of distress symptoms.

Key words: stress, psychological, expressed emotion, psychology.

Rapolienė L, Skarbalienė A, Gedrimė L, Mockevičienė D, Razbadauskas A. The influence of psychosocial factors on distress expression. *Fam Med Prim Care Rev* 2019; 21(1): 41–46, doi: <https://doi.org/10.5114/fmPCR.2019.82978>.

Background

The concept of stress has been one of the most controversial constructs both in its definition and in theoretical models. Stress covers our physical, mental, and emotional reactions to environmental factors and changes. Stress is shaped by external factors (working conditions, occupational, social and behavioral factors) and internal factors (personal and inheritance, age, seniority, occupation, psychological type, etc.) [1]. The definitions of stress feature three components that are suitable for identifying the worker's stress at work: factors that cause stress, stress expression, and personal characteristics of a person who experiences stress. The survey accomplished in Lithuania has revealed that 76.9% of all health workers and 71% of all education workers are suffering from stress [2]. In contrast 54% of all Americans are stressed daily, 62% admit that work has a significant impact on stress, and 73% say that money and the problems related to it are the most significant stress factor [3].

The European Commission emphasizes these stressful factors at work:

- organizational culture or "atmosphere", i.e. the attitude of people towards stress at work;
- requirements, i.e. workload and the effect of harmful physical agents;
- control, i.e. the influence of employees on the work done;

- relationship, i.e. estimated intimidation and violence at work;
- changes, i.e. how changes are managed and how employees are informed about them;
- functions, i.e. how employees understand their corporate functions and what are the conflict avoidance strategies applied;
- support, i.e. whether co-workers and managers provide support;
- training, i.e. how new skills are provided;
- individual factors, i.e. an evaluation of individual differences [4].

The stressful jobs report emphasizes that travel, competition, potential career growth, difficult-to-meet deadlines, heavy physical demands, hazardous environmental conditions, encountered hazards, risk of death or grievous injury, immediate risk of another's life, meeting the public and working in the public eye are the factors influencing job stress [5]. Individual response to stress may include the following: pulse rate, long-term psychosomatic and somatic disorders [6].

Psychosocial stress is the cause of illness and can lead to the behavioral changes that tend to be harmful to health: smoking, unhealthy and unhealthy diets, drug-abuse and abstinence. Such changes can lead to the emergence of a mental illness. McEwen and Gianaros argue that stress affects the brain and



the immune system. These two-way stress processes affect knowledge, experience, and behavior [7].

Aschbacher et al. have introduced the integrated stress model that identifies two-way causal relationships between psychosocial stressors and health-related behaviors and diseases [8]. Research done in many countries has shown that stressful events lead to cardiovascular, gastrointestinal, immune, muscular and emotional disorders [9]. The most commonly reported symptoms of stress in psychosomatic patients in Lithuania are as follows: sleep disorders (67.1%), increased heart rate (67.1%), stomach cramps (51.6%), hand/foot palsy and sweat (51.4%), tiredness (90.7%), sleep disturbances, increased heart rate and stomach cramps (67.4%) [10].

Drapeau et al. describe psychological stress as a “state of emotional suffering characterized by symptoms of depression and anxiety” [11]. Thus, it is widely agreed that stress is particularly harmful to people of working age as it is positively associated with burnout [12–14].

The term *burnout* has been designated and accepted by practically the entire scientific community since the conceptualisation established by Maslach [15]. Burnout is a syndrome that results from chronic stress at work with several consequences to workers’ well-being and health [16]. Burnout is defined as the result of prolonged exposure to chronic stressors at both personal and relationship levels at work and is determined by the following elements: emotional exhaustion (understood as the feeling of being no longer able to give more of oneself emotionally), depersonalisation, a considered remote attitude to work and towards the recipients of care, to colleagues and to personal accomplishment, feeling that tasks have not been completed correctly and of being incompetent at work. In an organisational context, it has been increasingly focused on the individual differences and personal resources of workers as protective factors against occupational stress [17]. Work-related fatigue is recognised to have an adverse effect on professional results. Fatigue and exhaustion have been reported to be among the reasons why individuals leave a profession [18]. It is argued that occupational stress and the related burnout syndrome is undoubtedly one of the most important challenges for today’s professionals [19].

Psychological studies show the strong link between one’s mind and body. As mental health declines, physical health could be worn down; consequently, if the physical health declines, it can make a person feel mentally “down” [3]. Additionally, it is emphasized that the majority of primary care patients report symptoms of psychosomatic disorders that are aggravated by daily stressful situations [20]. It is also argued that stress alters interpersonal relationships in and outside the family unit and weakens the sense of safety [21].

Stress expression is influenced by various psychosocial and demographic factors. Herein, education, age, and gender have a different correlation with the distress expression [21, 22]. Psychosocial factors have a direct effect on stress by changing posture through stress. In addition, a straightforward pathway between work methods, including ergonomics, organizational systems, and work environments, has been identified. Indeed, individuals with higher education score lower on the emotional exhaustion scale and more easily cope with stress [19, 21]. Another study has revealed that younger age, single status, and female gender are significant predictors of a greater stress score and/or more psychosocial needs [23]. Still the lack of research analysing how other psychosocial and sociodemographical factors influence the level of stress and its expression could be distinguished.

Hence, the authors suggest that psychosocial variables may be useful in identifying individuals who are more likely to report higher levels of distress and in revealing the correlation between different psychosocial variables and the expression of distress symptoms.

Objectives

The aim of this paper is to analyse the influence of psychosocial factors (gender, age, education, profession, character of the work, work experience, work and leisure hours, work-related stress risk factors, and some of the many health-related behavioral factors) on distress expression.

Material and methods

A community-based cross-sectional study was conducted in a sample of 606 workers from Klaipėda city (Lithuania) in February–March 2018. A questionnaire-based survey was carried out with the authorisation of Kaunas Regional Biomedical Research Ethics Committee (permission No. BE-2-1). Inclusion criteria for participants were age of 18–65 years, currently working, no history of clinical diagnosed disease, willingness and possibility to participate in the study. Additional information on the demographics and work-related characteristics of the participants is provided in Table 1, 2 and 3.

The General Symptoms Distress Scale (GSDS) was used for measuring distress [24]. The scale was chosen due to its adequate internal consistency, reliability, good constructional and prognostic validity, good correlation with depression, positive and negative affects [24]. The work-related stress factors list [5] was used to reveal the most common occupational stressors and their correlation with the distress symptoms.

Data was reported as the mean \pm SD for continuous variables or as frequencies in the case of categorical variables. Descriptive statistics and univariate analyses were carried out using SPSS V23.0 (SPSS Inc, Chicago, Illinois, USA). Pearson χ^2 tests and independent-sample *t*-tests were applied to compare the independent variables versus the dependent; the hypothesis concerning the equality of probability distribution was checked against the Mann–Whitney–Wilcoxon U nonparametric criterion. Moreover, the corresponding 95% CIs were calculated. Pearson’s correlation coefficient was used to measure the strength of association between variables. Herein, *p*-value < 0.05 was considered to be significant for all tests.

Results

Study respondents mean age is 41, a majority are women, married, with university education, have more than 20 year of work experience as a specialist with more sedentary work characteristics, bring home a net income of 500–1000 Eur/month, working 9–12 hours/day, with main stress-related factors as follows: environmental conditions, deadlines, competition and work in public, resting 7–8 hours/day (Table 1, 2). Furthermore, 20% (121) of all respondents are smokers, 85.5% (518) use alcohol, 87.8% (542) have some physical activities, and 10.6% (64) sometimes apply rehabilitation procedures (Table 3).

Table 1. Sociodemographical and work-related characteristics of respondents

Indicator	Total (<i>n</i> = 606)	Indicator	Total (<i>n</i> = 606)
Age, mean (SD)	41.1 (13.1)	Working hours, <i>n</i> (%)	
Gender, <i>n</i> (%)		Less than 8	250 (41.3)
Men	130 (21.5)	9–12	270 (44.6)
Women	476 (78.5)	13–16	22 (3.6)
Education, <i>n</i> (%)		More than 16	20 (3.3)
Primary education	1 (0.2)	Various	44 (7.3)

Indicator	Total (n = 606)	Indicator	Total (n = 606)
Incomplete middle education	16 (2.6)	Resting hours, n (%)	
Secondary	91 (15)	Less than 6	128 (21.1)
Higher	76 (12.5)	7–8	247 (40.8)
High	58 (9.6)	9–10	127 (21)
University	358 (59.1)	More than 10	85 (14)
PhD	6 (1)	Various	19 (3.1)
Work experience, n (%)		Character of the work, n (%)	
Less than 1 year	53 (8.7)	Mainly sedentary	205 (33.8)
2–5 years	83 (13.7)	Sedentary with frequent physical activity	229 (37.8)
6–10 years	89 (14.7)	Mainly physical	139 (22.9)
11–20 years	146 (24.1)	Physical with frequent intense activity	20 (3.3)
More than 20 years	235 (38.8)		

Profession, n (%)	Total (n = 606)
Leaders	14 (2.3)
Specialists	239 (39.4)
Techniques and younger specialists	10 (1.7)
Officials	31 (5.1)
Service and sales	56 (9.2)
Qualified specialists in the field of land, forest, fisheries	3 (0.5)
Skilled workers and craftsmen	20 (3.3)
Machine operators	4 (0.7)
Unqualified workers	8 (1.3)
Armed forces	2 (0.3)
Unemployed according to specialty	219 (36.1)

Indicator	Total (n = 606)	Indicator	Total (n = 606)
Smoking, n (%)	121 (20)	Physical activity, n (%)	542 (87.8)
Everyday	49 (8.1)	Everyday	70 (11.6)
Often	15 (2.5)	4–6 times/week	62 (10.2)
Occasionally	57 (9.4)	2–3 times/week	162 (26.7)
Never	485 (80.0)	Once per week	91 (15)
Amount of cigarettes, mean (SD)	1.16 (4.06)	2–3 times/month	70 (11.6)
Alcohol use, n (%)	518 (85.5)	A few times per year	77 (12.7)
Everyday	4 (0.7)	Never	74 (12.2)
2–3 times/week	32 (5.3)	Rehabilitation, n (%)	64 (10.6)
Once per week	60 (9.9)		
2–3 times/month	185 (30.5)		
A few times per year	237 (39.1)		
Never	88 (14)		

Overall stress intensity in the study group is 6.0 (SD 2.4). According to the GSDS scale, the mean number of distress symptoms is 3.8 (SD 3.1), their intensity is 4.6 (SD 2.4), whereas management equals to 6.1 (SD 2.6) (Table 4).

	Minimum	Maximum	Mean	Std. deviation
Stress level	1	10	5.96	2.41
GSDS level	0	13	3.81	3.13
Suffering	1	10	4.56	2.35
Management	1	10	6.11	2.61

According to the prevalence of the distress symptoms, most prevalent is fatigue (70.3%; $n = 426$) followed by anxiety (53.8%; $n = 326$) and sleep difficulties (49%; $n = 297$). The rest are concentration difficulties (39.3%; $n = 238$), pain (38.1%; $n = 231$), intestinal problems (33.5%; $n = 203$), depression (24.6%; $n = 149$), cough (17.8%; $n = 108$), nausea (15%; $n = 91$), dyspnoea (14%; $n = 85$), loss of appetite (12.5%; $n = 76$), other symptoms (9.1%; $n = 55$) and vomiting (4.1%; $n = 25$) (Figure 1).

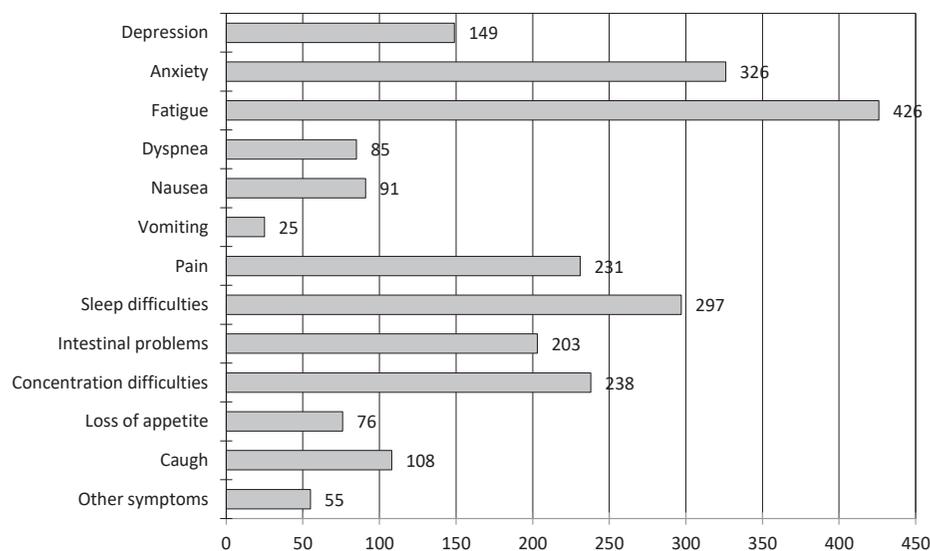


Figure 1. Frequency of distress symptoms

The results have showed that 18.5% (112) of all respondents have felt no symptoms, while 12.5% (76) have experienced 2 symptoms, 12.2% (74) had 3 symptoms, and 11.9% (72) felt 5 symptoms at once.

The statistically significant difference in overall distress symptoms scale has not been determined when comparing respondents by gender ($p > 0.05$). However, female respondents have indicated having all distress symptoms more frequently. Statistically significant differences between women and men have been identified in having anxiety, fatigue, nausea, pain, sleeping difficulties, intestinal problems and concentration difficulties (Table 5). Female respondents tend to experience anxiety, fatigue, pain, sleep and concentration difficulties, whereas male respon-

dents tend to indicate having fatigue, anxiety and sleep and concentration difficulties most frequently.

Education is considered as the factor of differences in experiencing distress symptoms (Table 6). The level of education has positive correlation with depression ($r = 0.152$; $p < 0.0001$), anxiety ($r = 0.177$; $p < 0.0001$), fatigue ($r = 0.142$; $p < 0.0001$), nausea ($r = 0.106$; $p = 0.009$), pain ($r = 0.132$; $p < 0.0001$), intestinal problems ($r = 0.187$; $p < 0.0001$) and concentration difficulties ($r = 0.156$; $p < 0.0001$).

Work experience has a negative association with experiencing anxiety ($r = -0.108$; $p = 0.008$), nausea ($r = -0.111$; $p = 0.006$), intestinal problems ($r = -0.081$; $p = 0.045$), concentration difficulties ($r = -0.106$; $p = 0.009$) and loss of appetite ($r = -0.163$; $p < 0.0001$). This correlation indicates that people with less work experience are more likely to experience symptoms of distress (Table 6).

The data reveals that the occupation of respondents does not affect the possession of symptoms of distress, but the sedentary nature of work influences concentration difficulties more ($\chi^2 = 12.25$; $df = 3$; $p = 0.007$), in comparison with the more active work character. Furthermore, the number of working hours per day does not correlate and makes no significant difference to having distress symptoms. However, leisure hours make an impact (Table 6). Having less than 8 resting hours per day brings about anxiety, fatigue, pain, sleep difficulties, intestinal problems and concentration difficulties.

Stress coming from certain environmental conditions, competition, and career growth potential, keeping deadlines, working in the public eye and meeting the public, as well as that caused by encountered hazards or physical demands influences the expression of distress symptoms (overall GSDS) (Table 7). However, health-related behavioral factors involved in the study have no significant correlation with distress symptoms: smoking ($p > 0.05$), alcohol use ($p > 0.05$), physical activity ($p > 0.05$) and rehabilitation in the last 3 months ($p > 0.05$).

According to the results, anxiety, fatigue, pain, sleep difficulties and concentration difficulties are the most common distress symptoms in this study. It should be mentioned that anxiety has a positive correlation with depression ($r = 0.46$; $p < 0.0001$), fatigue ($r = 0.506$; $p < 0.0001$), sleep difficulties ($r = 0.438$; $p < 0.0001$) and concentration difficulties ($r = 0.454$; $p < 0.0001$). Fatigue has positively associated with sleep difficulties ($r = 0.399$; $p < 0.0001$) and concentration difficulties ($r = 0.367$; $p < 0.0001$). Pain has a positive relation with depression ($r = 0.357$; $p < 0.0001$), anxiety ($r = 0.373$; $p < 0.0001$), fatigue ($r = 0.361$; $p < 0.0001$), sleep difficulties ($r = 0.379$; $p < 0.0001$) and concentration difficulties ($r = 0.378$; $p < 0.0001$). Moreover, sleep difficulties are positively associated with anxiety ($r = 0.438$; $p < 0.0001$), fatigue ($r = 0.399$; $p < 0.0001$) and concentration difficulties ($r = 0.462$; $p < 0.0001$). Finally, concentration difficulties have a positive correlation with depression ($r = 0.482$; $p < 0.0001$) and anxiety ($r = 0.454$; $p < 0.0001$).

Table 5. Distress symptoms correlation with gender

Symptom	χ^2	df	p	Feeling the symptoms, %	
				female	male
Depression	3.35	1	0.067	26.26	18.46
Anxiety	15.656	1	0.0001	57.98	38.46
Fatigue	11.103	1	0.001	73.53	58.46
Dyspnoea	0.85	1	0.357	14.71	11.54
Nausea	6.957	1	0.008	17.02	7.69
Vomiting	0.46	1	0.498	4.41	3.08
Pain	5.543	1	0.019	40.55	29.23
Sleep difficulties	10.946	1	0.001	52.52	36.15
Intestinal problems	16.798	1	0.0001	37.61	18.46
Concentration difficulties	5.968	1	0.015	41.81	30.0
Loss of appetite	0.474	1	0.491	13.03	10.77
Cough	1.162	1	0.281	18.7	14.62
Other symptoms	0.384	1	0.536	9.45	7.69

Table 6. Correlation of distress symptoms with education, work experience and leisure hours

Symptom	Education		Work experience		Leisure hours	
	χ^2 (df)	p	χ^2 (df)	p	χ^2 (df)	p
Depression	26.542 (6)	0.0001	6.441 (4)	0.169	1.858 (3)	0.602
Anxiety	23.983 (6)	0.001	12.44 (4)	0.014	14.745 (3)	0.002
Fatigue	16.175 (6)	0.013	2.531 (4)	0.639	11.532 (3)	0.009
Dispnoea	3.161 (6)	0.788	4.174 (4)	0.383	4.521 (3)	0.21
Nausea	15.645 (6)	0.016	12.429 (4)	0.014	5.782 (3)	0.123
Vomiting	5.235 (6)	0.514	3.96 (4)	0.412	5.503 (3)	0.138
Pain	12.659 (6)	0.049	2.781 (4)	0.595	7.839 (3)	0.049
Sleep difficulties	8.711 (6)	0.191	5.864 (4)	0.210	17.138 (3)	0.001
Intestinal problems	25.59 (6)	0.0001	10.845 (4)	0.028	11.45 (3)	0.010
Concentration difficulties	19.682 (6)	0.003	10.473 (4)	0.033	10.953 (3)	0.012
Loss of appetite	5.812 (6)	0.445	18.203 (4)	0.001	4.904 (3)	0.179
Cough	8.138 (6)	0.228	7.098 (4)	0.131	1.054 (3)	0.788
Other symptoms	2.354 (6)	0.884	5.438 (4)	0.245	2.32 (3)	0.509

Work related stress factors	<i>r</i>	<i>p</i>
Competition	0.591	0.0001
Deadlines	0.487	0.0001
Environmental conditions	0.556	0.0001
Career growth potential	0.434	0.001
Hazards encountered	0.191	0.025
Risk of death or grievous injury	0.028	0.485
Immediate risk of another's life	0.031	0.453
Meeting the public	0.527	0.002
Physical demands	0.385	0.037
Travel	-0.008	0.843
Working in the public eye	0.419	0.003

Discussion

Continuous stress issue related studies are important as stress-related and psychological problems associated with work are considered to be one of the more important and dangerous challenges in contemporary society. The European Parliament has proposed the recommendation that the next Strategy, or any other relevant European framework on occupational health and safety, should include stress at work as a priority area [26].

Though there is a number of studies done, continuous monitoring is needed concerning the initiatives that have been shared for improving workers' mental well-being. For example, the International Labour Office (ILO) has included mental and behavioural disorders in the list of occupational diseases, but mental health disorders are recognised as occupational diseases only in a few EU Member States. Lithuania is one of them [26]. That is another argument as to why knowledge about how psychosocial factors influence on stress expression is relevant. This knowledge can help family physicians to diagnose early any disorder in mental well-being and prevent mental illness. Assessing general and specific aspects of the work environment that are most distressing for individual workers and that adversely affect groups of employees is important. By knowing the most dangerous psychological health factors in the work environment, employers can take actions to reorganize the environment.

Researches on work-related stress issue had been carried out previously in Lithuania. Still, only representatives of individual professions, such as drivers [26], teachers [2], nurses [1, 10], etc. were involved. Our study involved employees regardless of occupation. Though participants were asked about their profession, it was revealed that occupation have no correlation with the distress symptoms. This suggests that stress research data can be applied to the entire population of the workforce, and not just to the individual professions.

Our results have shown that only 18.5% (112) of all respondents have faced no distress symptoms, while others have experienced 2 or more. Another survey accomplished in Lithuania has revealed that 70% to 80% of all professionals representing different professions are suffering from stress [2]. Furthermore, an American study demonstrated that more than half of all Americans are stressed daily [3]. This means that work related stress has become a serious problem in today's society.

The most prevalent stress symptoms are fatigue, followed by anxiety and sleep difficulties. The rest are concentration difficulties, pain, intestinal problems, depression, cough, nausea, dyspnoea, loss of appetite, other symptoms and vomiting. Research in many countries has also indicated that stressful events lead to cardiovascular, gastrointestinal, immune, muscular and emotional disorders [9]. Since fatigue and exhaustion have been reported to be among the reasons why individuals leave the profession [18], these results are the signals for the employers to affect changes so as to retain a competent staff.

The results have revealed that work-related stress is influenced by both personal (gender, age, education, etc.) and environmental (working/leisure hours, nature of work, work environment, etc) factors. This provides additional argumentation to understanding that stress covers our physical, mental and emotional reactions to environmental factors and changes. Stress is shaped by external factors (working conditions, occupational, social and behavioral factors) and internal factors (personal and inheritance: age, occupation, seniority, occupation, psychological type, etc.) [1].

The most stressful external factors are hazardous environmental conditions, competition and career growth, deadlines, meeting the public, encountered hazards, heavy physical demands, sedentary nature of work and insufficient rest. Organizational culture or "atmosphere", workload, control, relationship, support, etc. are identified as important work-related stressors in other studies as well [4, 5]. As these factors can be corrected, employers seeking to have efficient employees should focus on developing a worker-friendly work environment.

In our study, the most stressful internal factors revealed are female gender, education and less work experience. Individual factors are emphasized as stressful factors at work by others as well [4]. Another study has revealed that younger age and female gender are significant predictors of a greater stress score [21–23]. What is more, lack of knowledge was seen as a factor influencing stress in yet a further study [26]. Since female gender is the most common internal stress factor, in order to avoid serious physical illnesses and professional burnout, more attention should be paid not only to developing the work environment for female employees, but also to monitoring the expression of the stress symptoms.

Limitations of the study

Though the study represents the analysis of the influence of psychosocial factors on distress expression among the Lithuanian workers, the data has been collected only in Western Lithuania. This issue has been strengthened by applying an appropriate sampling plan where representation of the subjects is dependent on the probability distribution of the data observed. Hence, the results of the study could not be generalised in the context of a larger population, but rather be suggested [25].

Implications for practice

The knowledge gained in this study could be beneficial in improving the monitoring of occupational stress and in improving occupational environment so as to suit the psychosocial characteristics of employees.

Conclusions

This study broadens the understanding about the influence of psychosocial factors (gender, age, education, profession, the character of the work, work experience, work and leisure hours, work-related stress risk factors and some of the health-related behavioral factors) on distress expression. Female gender, education, less work experience, sedentary nature of work, and insufficient rest are the factors positively associated with having more distress symptoms. Hazardous environmental conditions, competition and career growth potential, difficult-to-meet deadlines, working in the public eye and meeting the public, hazards encountered, and physical demands also influence the expression of distress symptoms. Anxiety, fatigue, pain, sleep difficulties and concentration difficulties are the most common distress symptoms. The results suggest some factors for stress monitoring and ideas for the improvement of environmental conditions.

Source of funding: This work was funded from university's funds.
Conflicts of interest: The authors declare no conflicts of interest.

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Received: 25.09.2018

Reviewed: 27.09.2018

Accepted: 25.11.2018

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