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Article

Workaholism, sleep disorders, and potential e-learning impacts among Menoufia University staff during COVID-19 pandemic

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Abstract

Background: Workaholism is described as a constant, internal drive to work and behavioral addiction to work. Studies have shown the negative associations between workaholism, job performance, and health results as disrupted sleep. The purpose of this research was to compare the prevalence of workaholics among the academic staff of practical and theoretical Faculties in Egyptian universities using the Dutch Workaholism Scale (DUWAS) and to determine associated sleep problems. Also, it studied the added impact of E-learning on the prevalence of workaholism frequency during the COVID-19 pandemic.

Design and Methods: A cross-sectional study was conducted among 336 participants. Work addiction was assessed using DUWAS (17 items) as well as questionnaires on personal, occupational characteristics, and sleep problems. DUWAS scale was repeated after six months during COVID 19 pandemic to investigate the impact of E-learning on the workaholic behavior of the studied groups.

Results: Our study revealed that the prevalence of workaholism was 33%; 32.8% and 33.7% were listed for the faculties of Medicine and Arts, respectively. After the COVID-19 pandemic, workaholic frequency was significantly increased to be 46.4%. Adjusted logistic regression analysis showed that workaholism had negatively impacted sleep in terms of difficulty initiating sleep, difficulty maintaining sleep, and insufficient sleep.

Conclusion: The prevalence of workaholism appears to be high among university staff members especially after COVID-19 crisis. Sleep problems were linked to workaholics more than other workers. We recommend encouraging employees to work to their contracted hours, as excess work over extended periods may have adverse effects not only on organizational productivity but also on their health.

Introduction

In an attempt to describe his working behaviors, Oates coined the term ‘’workaholism’’.[1,2] He defined workaholism as the desire or the uncontrollable urge to work unceasingly. Workaholics spend a lot more time on work-related tasks and commit more time to work than seems appropriate.[3-5] Workaholic employees are unable to remove themselves from the task, they constantly worry about their job; that is, even when they are not working. They experience unmanageable and solid self-discipline to work hard.[6]

Two characteristics are unique for workaholism:[2] working compulsively (WC) and working excessively (WE). The former function is the cognitive element of workaholism, and the latter is the behavioral aspect of workaholism.[7-9]

The Dutch Workaholism Scale (DUWAS) was designed by Schaufeli and his colleagues.[9] In several studies,[10,11] the DUWAS displayed excellent psychometric properties and has assessed workaholism as an intense obsessive compulsion.

Workaholism has been related to negative effects such as family tensions, poor social relationships, and neuropsychic conditions such as depression, burnout, sleep disorders.[8,12,13] Many negative effects, including social and behavioral disorders, are also correlated with sleep disorders. Besides, sleep issues are related not only to poor health but also to poor job functioning among the working population, which can lead to an increased risk of accidents at work, lack of interest, absenteeism, high levels of turnover, lower workplace dissatisfaction, and productivity.[14,15]

The COVID-19 pandemic as an infectious disease is caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), which began in the Chinese city of Wuhan.[16] This makes universities shift to E-learning to restrict COVID-19 spread. E-learning is defined as the computer technology used to deliver online and/or offline learning, or the wide range of applications that use electronic media and technologies for learning.[17,18] It is a better learning method than conventional learning because it included video conferences, seminars, and discussions with peers, as well as the ability to receive input from assignments.[19,20] Positive items for E-learning were stated as the ability to find lectures anytime, recall the information, and cost benefits.[21,22] Besides the strengths of E-learning, some weaknesses are also encountered including technical problems, time management, extra work hours, distractions, and anxiety.[23]

Significance for public health

Workaholism with its possible health-related outcomes is a growing public health concern. In today's fast world, work addiction has become an important issue that managers, social workers, and healthcare professionals have to identify and address. The solution to workaholism must be to develop a good workplace culture and adapt the definition of success of our society. Leaders and managers should actively help staff to strike a work-life balance. E-Learning in Egyptian universities has increased exponentially since the Covid-19 outbreak has started. University staff has changed their whole approach to tackling and adapting to new market conditions. With its implications for their mental health, especially those who have been coined to be workaholics.

During the COVID-19 crisis, home working may have related to negative emotional outcomes among workers.[21,24] The underqualified workers and organizations increase the risks of negative psychological stress and health problems.[25] Styles of work and work duration also have various impacts on well-being. Lee and his colleagues[26] revealed that long work hours contribute to working stress and psychological stress. Through this research, workaholism prevalence among theoretical and practical teaching staff of an Egyptian University was compared using the Dutch Workaholism Scale (DUWAS) and associated sleeping problems were measured. We also studied the impact of E-learning on workaholic frequency in the context of the COVID 19 pandemic.

Design and Methods

Participants

A cross-sectional study was conducted at two faculties, Menoufia University, Egypt, from the beginning of September 2019 to the end of September 2020. The faculty of Medicine was chosen to represent practical work (in hospital or clinic) besides the academic job while the Faculty of Arts were recruited as academic and theoretical work only. The total number of medical staff members was 1165 while those of the Arts Faculty was 389. The sample size was calculated among each Faculty from the following equation for this cross-sectional study

$$n = \frac{Z^2\ (pq)}{e^2}$$

where n= the sample size; Z=standard error associated with the chosen confidence level (1.96); p=estimated percentage in the population; q=100-p and e = acceptable sample error (5%)

Based on a previous study (10), with 95% CI and 80% power, using the Raosoft sample size calculator and assuming a marginal error of 0.05. The estimated sample was 316 participants which were distributed proportionally to 221 and 95 for Medical and Arts Faculties staff members, respectively. Ten percent of participants were added to avoid censored cases, the total number of studied staff members for both Faculties of Medicine and Arts was 232 and 104; respectively.

Ethical approval

Before conducting this study, formal approval was obtained from the Medical Research Ethics Committee of the Faculty of Medicine, Menoufia University, Egypt.

The researchers clarified the study's objectives to the participants, and all of them signed a consent document before participating. The Participant Consent Form was developed under the International Ethical Guidelines for Biomedical Research on the Human Subject, as prepared by the Council for International Organizations of Medical Sciences in collaboration with the World Health Organization.[27]

Materials

The predesigned questionnaire included socio-demographic and job characteristics (i.e., job description, work duration, and working hours per day). The questionnaire was created by the researchers after a review of related literature and was tested for content validity by a panel of experts in the field. Wording that was unclear or ambiguous was changed based on the responses of these experts. Workaholism was assessed using the validated Dutch Workaholism Scale (DUWAS).[9,28] This scale is made up of 17 items for two subscales, ten items for working excessively (WE; 'e.g., "I over commit myself by biting more off than I can chew") and seven items for working compulsively (WC; e.g., ''I seem to have an inner compulsion to work hard, a feeling that it is something I have to do whether I want to or not''). On a 4-point Likert scale, each object is classified (1=almost never, 2=sometimes, 3=often, and 4=almost always). The subscales "work compulsively" and "work excessively" reflected workaholism's cognitive and behavioral elements, respectively. This scale was recorded twice. The first time was before the COVID 19 pandemic. The second time was six months after the start of the COVID 19 pandemic. As learning after COVID 19 has transitioned from face-to-face to e-learning. To assess the impact of e-learning on the prevalence of workaholism following the COVID 19 pandemic, a comparison of the two evaluations was performed.

Using the median scores for WE and WC in the current analysis, the participants were divided into four classes: i) The participants were categorized as relaxed employees if the score of both WC and WE was low; ii) They were compulsive employees when the score was high on WC but low on, W; ii) They were hard workers if the score was high on, WE but low on WC.; furthermore, iv) if the score was high for both WC and WE, they were workaholics.

For this study, eight questions related to sleep problems were selected based on previous epidemiological studies,[14,29,30] namely: difficulty initiating sleep (DIS); difficulty maintaining sleep (DMS); early morning awakening (EMA); dozing off or napping in the daytime; insufficiency of sleep; excessive daytime sleepiness (EDS) at work; difficulty awakening in the morning (DAM); and tiredness upon awakening in the morning. Each sleep question was dichotomized. Insomnia symptoms were defined as at least one positive response either to DIS, DMS, or EMA questions.

Data management

Data were analyzed using IBM SPSS advanced statistics v. 20 (SPSS Inc., Chicago, IL, USA). The relationships between qualitative variables (sleep problems, different workaholic groups and types of work) are examined by Chi-square test. An Odds ratio (OR) with a 95% confidence interval (CI) was used for risk estimation. A binary logistic regression analysis was used to determine the risks of workaholism groups' differences in sleep problems and also to assess the sociodemographic and occupational predictors of sleep problems. There were eight sleep problems. Each one had a dichotomous variable (positive and negative). This was the dependent variable of each binary logistic regression. There were three independent variables (predictors) in each model as the following: academic degree, sex, and duration of work/years. A p-value <0.05 was considered significant.

Results

A random sample of 336 staff members employed at Menoufia University completed the questionnaire. The age of the participants under the study ranged from 22 to 63 years (35.34±9.0), most of them were married and from urban residence (77.1% and 69%, respectively), and 51.2% were females. They were distributed according to their academic degrees into the following categories: demonstrator, assistant lecturer, lecturer, assistant professor, and professor (34.8%, 19.9%, 21.1%, 12.8%, and 11.3%; respectively). The mean employment duration in years was 10.56±8.58 and ranged from 1 to 40 years (Table 1).

The participants under the study were classified using DUWS into four groups: 22.3% relaxed workers, 27.4% compulsive workers, 17.3% hard workers, and 33% workaholics. There was no significant difference in workaholic prevalence between Faculty of Medicine and Faculty of Arts staff members (32.8% and 33.7%; p>0.05) respectively (Table 2).

The workaholism prevalence was significantly increased after COVID-19 pandemic to be 43.5% (Figure 1).

Workaholics had a higher prevalence than relaxed ones for sleep problems in terms of difficulty initiating sleep, difficulty maintaining sleep, and insufficient sleep (p<0.05). Interestingly, compulsive groups had a higher frequency for difficulty maintaining sleep, early morning awakening, insufficient sleep, and insomnia symptoms than relaxed ones (p<0.05, see Table 3).

In this study, the Faculty of Medicine staff were observed to have a higher prevalence of insomnia symptoms, difficulty awakening in the morning, and tiredness in the morning than those of the Faculty of Arts (p<0.05, see Table 4). Binary logistic regression of dichotomous sleep problems revealed that being female was a more reliable predictor of difficulty maintaining sleep (Adjusted OR 2.18, p<0.05). Concerning working status, being an assistant lecturer meant being less prone to excessive daytime sleepiness than a demonstrator (Adjusted OR 0.16, p<0.05). Insomnia symptoms and difficulty awakening in the morning were decreased with increased work duration (Adjusted OR 0.87 and 0.95; p<0.05). Workaholics had higher risks than relaxed ones for sleep problems in terms of difficulty initiating sleep, difficulty maintaining sleep, and insufficient sleep (OR: 1.97, 3.39, and 2.23; respectively) (p<0.05). Compulsive groups had higher odds of difficulties maintaining sleep, early morning waking, insufficient sleep, and insom-

Table 1. Sociodemographic characteristics of participants.

Sociodemographic characteristics	University staff members		Total	p-value
	Faculty of Medicine (n=232) n (%)	Faculty of Arts (n=104) n (%)	n=336 n (%)	
Age (years)				
Mean±SD	35.85±8.04	36.42±10.80	35.34±9.0	0.59
Min-Max	25-63	22-61	22-63	
Sex				
Male	111 (47.8%)	53 (50.9%)	164 (48.8%)	0.68
Female	121 (52.2%)	51 (49.1%)	172 (51.2%)	
Residence				
Urban	160 (68.9%)	72 (69.2%)	232 (69.0%)	0.93
Rural	72 (31.1%)	32 (30.8%)	103 (31.0%)	
Income				
Enough	120 (51.7%)	51 (49.1%)	171 (50.9%)	0.74
Not enough	112 (48.3%)	53 (50.9%)	165 (49.1%)	
Academic degree				
Demonstrator	85 (36.6%)	32 (30.8%)	117 (34.8%)	0.28
Assistant lecturer	43 (18.5%)	24 (23.1%)	67 (19.9%)	
Lecturer	49 (21.1%)	22 (21.2%)	71 (21.1%)	
Assistant professor	30 (12.9%)	13 (12.5%)	43 (12.8%)	
Professor	25 (10.8%)	13 (12.5%)	38 (11.3%)	
Marital Status				
Single	53 (22.8%)	24 (23.1%)	77 (22.9%)	0.93
Married	179 (77.2%)	80 (76.9%)	259 (77.1%)	
Duration of work (years)				
Mean±SD	10.78±7.79	11.82±9.93	10.56±8.58	0.30
Min-Max	1-36	1-40	1-40	

Table 2. Prevalence of workaholism across Faculties of Medicine and Arts.

Sociodemographic characteristics	University staff members		Total	p-value
	Faculty of Medicine (n=232) n (%)	Faculty of Arts (n=104) n (%)	n=336 n (%)	
Relaxed workers	56 (24.1)	19 (18.3)	75 (22.30)	0.48
Compulsive workers	64 (27.6)	28 (26.9)	92 (27.4)	
Hard workers	36 (15.5)	22 (21.2)	58 (17.3)	
Workaholics	76 (32.8)	35 (33.7)	111 (33.0)	

nia symptoms than relaxed groups (adjusted OR:2.44,2.04, 2.05 and 4.10; respectively; p<0.05, Table 5). Univariate analysis was performed and the significant variables were included in the regression model.

Discussion

The prevalence of workaholism in participants was 33% as studied using DUWAS. Moreover, this prevalence was 32.8% for the Faculty of Medicine staff and 33.7% for the Faculty of Arts staff were workaholics. This was higher than reported in previous studies[9] that assessed workaholism among medical residents which reported that the proportion of workaholics estimated was 16%. This could be attributed to the difference in the culture and nature of work among Egyptian workers who must work extra hours to compensate for low salaries.

Several previous studies measured work addiction prevalence using different scales. Burke used the Work-BAT among professional adults in Canada and found that 15.9% of males and 16.8% of females had work addiction.[31] Also, Andreassen and his colleagues[10] studied a sample of Norwegian employees and assessed them using the Bergen Work Addiction Scale (BWAS). They reported that the prevalence of workaholism was estimated to 8.3% ranging from 46.6% to 0.3%, depending on the participant cut-off scores.

The COVID-19 pandemic forced the closure of classrooms all over the world, forcing students and educators to abruptly change their face-to-face teaching approach. In this study, the prevalence of workaholism was increased following the COVID-19 pandemic. This could be explained by more workload, technology stress, and longer work time required among university staff members for e-learning preparations. This has generated more mental fatigue that could be a risk factor for workaholism.[32-34] Workaholics devote a significant amount of time and resources to their jobs, with little regard for the separation of work and personal life. They also work late at night and on weekends, sacrificing other personal and family activities and relationships, Almost all of these variables are amplified as a result of the COVID-19 pandemic's transition to E-learning.[32]

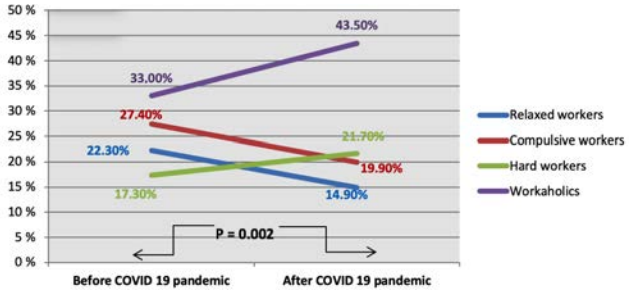

Figure 1. Prevalence of workaholism before and after COVID-19 pandemic.

Table 3. Associations between groups of workers (relaxed, compulsive, hard, workaholics) and sleep problems.

Sleep problems	Relaxed workers n=75 (%)	Compulsive workers n=92 (%)	Hard workers n=58 (%)	Workaholics n =111 (%)	p-value
Difficulty initiating sleep					P1=0.29
Positive	22 (29.3)	34 (37)	23 (39.7)	50 (45)	P2=0.21
Negative	53 (70.7)	58 (63)	35 (60.3)	61 (55)	P3=0.03*
Difficulty maintaining sleep					P1=0.04*
Positive	8 (10.7)	21 (22.8)	14 (24.1)	32 (28.8)	P2=0.04*
Negative	67 (89.3)	71 (77.2)	44 (75.9)	79 (71.2)	P3=0.003*
Early morning awakening					P1=0.04*
Positive	12 (16.0)	27 (29.3)	14 (24.1)	32 (28.8)	P2=0.24
Negative	63 (84.0)	65 (70.7)	44 (75.9)	97 (71.2)	P3=0.14
Excessive daytime sleepiness					P1=0.39
Positive	8 (10.7)	14 (15.2)	5 (8.6)	13 (11.7)	P2=0.69
Negative	67 (89.3)	78 (84.8)	53 (91.4)	98 (88.3)	P3=0.82
Insufficient sleep					P1=0.03*
Positive	34 (45.3)	57 (62.0)	28 (48.3)	72 (64.9)	P2=0.73
Negative	41 (54.7)	35 (38.0)	30 (51.7)	39 (35.1)	P3=0.008*
Insomnia symptoms					P1=0.02*
Positive	4 (5.3)	16 (17.4)	4 (6.9)	12 (10.8)	P2=0.71
Negative	71 (94.7)	76 (82.6)	54 (93.1)	99 (89.2)	P3=0.19
Difficulty awakening in the morning					P1=0.97
Positive	41 (54.7)	50 (54.3)	33 (56.9)	75 (67.6)	P2=0.80
Negative	34 (45.3)	42 (45.7)	25 (43.1)	36 (32.4)	P3=0.07
Tiredness awakening in the morning					P1=0.77
Positive	35 (46.7)	45 (48.9)	21 (36.2)	56 (50.5)	P2=0.23
Negative	40 (53.3)	47 (51.1)	37 (63.8)	55 (49.5)	P3=0.61

P1, compulsive groups versus relaxed one; P2, hard groups versus relaxed one; P3, workaholic groups versus relaxed one; *significant difference.

In our study, workaholics and compulsive workers had negatively impacted sleep, more than relaxed workers, Also after adjusting for demographic parameters and job-related variables, these associations between workaholism and sleep problems persisted. The negative aspects of workaholism were attributable to spending more time on work or increased job demands. Sleep problems were associated with the cognitive component of workaholism ("work compulsively") rather than the behavioral component ("work excessively"). It is likely that they think about work even after they get in bed, which might cause sympathetic arousal through cognitive activation.[34] This was in line with the results of earlier studies.[31,35-37] In the current study, insomnia, and difficulty waking in the morning were decreased with increased work duration. These findings in contrast with previous research by researchers who reported that the prevalence of insomnia symptoms increased with age.[38] In the current study, we found a large number of junior staff (demonstrators and assistant lecturers) had higher workloads than senior staff (assistant professors and professors). In contrast to senior staff, junior staff has more shifts and spend more time studying for exams required for their promotion.[39]

Conclusion and recommendations

This study reported a high prevalence of workaholism in university staff in Egypt especially after COVID -9 pandemic and using E-learning. The risk factor associated with sleep problems was workaholism. To minimize the negative impact of workaholism in the future, workers should be trained on proper work behavior, attitude at work, and work duration to maintain a healthy work-life balance. Future studies should explore the influence of work style and work environment on sleep quality among faculty members. Also, it should combine face-to-face learning and E-learning instead of E-learning only.

Limitation of this study

There are a few shortcomings that need to be addressed**.** First, a causal relationship cannot be established due to the study's cross-sectional nature with its known cons. Workaholism's long-term consequences are unclear. The causal relation between workaholism and sleep disorders needs to be investigated in a prospective study. Second, self-reported questionnaires were used to assess all measures. Despite those addressed limitations, this research explains the relation between workaholics and both sleep disorders and the added E-learning negative aspects after COVID-19 pandemic.

Table 4. Associated sleep problems for Faculty of Medicine and Faculty of Arts staff members.

Sleep problems	University staff members		p-value
	Faculty of medicine (n=232) (%)	Faculty of arts (n=104) (%)	
Difficulty initiating sleep			
Positive	88 (37.9)	41(39.4)	0.79
Negative	144 (62.1)	63 (66.6)	
Difficulty maintaining sleep			
Positive	51 (22)	24 (23.1)	0.82
Negative	181 (88)	80 (76.9)	
Early morning awakening			
Positive	59 (25.4)	26 (25.0)	0.93
Negative	173 (74.6)	78 (75.0)	
Excessive daytime sleepiness			
Positive	26 (11.2)	14 (13.5)	0.55
Negative	206 (88.8)	90 (86.5)	
Insufficient sleep			
Positive	138 (59.5)	53 (51.0)	0.15
Negative	94 (40.5)	51 (49.0)	
Insomnia symptoms			
Positive	33 (14.2)	3 (2.9)	0.001*
Negative	199 (85.8)	101 (97.1)	
Difficulty awakening in the morning			
Positive	148 (63.8)	51 (49.0)	0.01*
Negative	84 (36.2)	53 (51.0)	
Tiredness in the morning			
Positive	125 (53.9)	32 (30.8)	<0.001*
Negative	107 (46.1)	72 (69.2)	

*Significant difference.

Table 5. Binary logistic regression to detect predictors for sleep problems.

Sleep problems (dependent variable)	Predictors	p-value	Adjusted OR (95 % CI)
Difficulty initiating sleep	Academic degree: - Assistant lecturer	0.19	0.64 (0.33-1.24)
	- Lecturer	0.20	0.61 (0.28-1.31)
	- Assistant professor	0.55	1.37 (0.49-3.88)
	- Professor	0.51	0.64 (0.17-2.43)
	Sex: Female	0.92	1.02 (0.65-1.62)
	Duration of work/years	0.94	0.99 (0.95-1.05)
	Group of workers: - Compulsive workers	0.29	1.46 (0.75-2.84)
	- Hard workers	0.21	1.77 (0.85-3.71)
	- Workaholics	0.03*	1.99 (1.05-3.79)
	Faculties: Faculty of Medicine	0.79	0.94 (0.58-1.51)
Difficulty maintaining sleep	Academic degree: - Assistant lecturer	0.16	0.56 (0.25-1.25)
	- Lecturer	0.05*	0.37 (0.14-0.99)
	- Assistant professor	0.79	1.18 (0.35-3.98)
	- Professor	0.70	0.73 (0.14-3.68)
	Sex: Female	0.007*	2.18 (1.24-3.84)
	Duration of work/years	0.68	0.99 (0.93-1.05)
	Group of workers: - Compulsive workers	0.04*	2.44 (0.98-6.01)
	- Hard workers	0.04*	3.37 (1.26-9.03)
	- Workaholics	0.003*	3.41 (1.43-8.13)
	Faculties: Faculty of Medicine	0.82	0.94 (0.54-1.63)
Early morning awakening	Academic degree: - Assistant lecturer	0.95	1.03 (0.48-2.21)
	- Lecturer	0.52	0.75 (0.31-1.80)
	- Assistant professor	0.53	1.43 (0.47-4.32)
	- Professor	0.95	1.05 (0.25-4.36)
	Sex: Female	0.06	1.67 (0.98-2.85)
	Duration of work/years	0.16	1.04 (0.98-1.10)
	Group of workers: - Compulsive workers	0.04*	2.04 (0.93-4.45)
	- Hard workers	0.24	1.64 (0.68-3.97)
	- Workaholics	0.14	1.74 (0.81-3.74)
	Faculties: Faculty of Medicine	0.93	1.02 (0.60-1.74)
Excessive daytime sleepiness	Academic degree: - Assistant lecturer	0.02*	0.16 (0.04-0.75)
	- Lecturer	0.67	0.79 (0.26-2.41)
	- Assistant professor	0.75	1.28 (0.28-5.80)
	- Professor	0.91	0.89 (0.13-6.27)
	Sex: Female	0.11	0.56 (0.28-1.14)
	Duration of work/years	0.78	0.99 (0.91-1.07)
	Group of workers: - Compulsive workers	0.39	1.68 (0.65-4.36)
	- Hard workers	0.69	0.89 (0.27-2.96)
	- Workaholics	0.82	1.15 (0.44-3.04)
	Faculties: Faculty of Medicine	0.55	0.81 (0.40-1.63)
Insufficient sleep	Academic degree: - Assistant lecturer	0.54	0.81 (0.42-1.56)
	- Lecturer	0.61	0.82 (0.39-1.74)
	- Assistant professor	0.96	0.98 (0.34-2.80)
	- Professor	0.21	0.42 (0.11-1.60)
	Sex: Female	0.45	1.19 (0.76-1.88)
	Duration of work/years	0.90	1.00 (0.95-1.05)
	Group of workers: - Compulsive workers	0.03*	2.05 (1.09-3.85)
	- Hard workers	0.73	1.20 (0.59-2.41)
	- Workaholics	0.008*	2.45 (1.32-4.55)
	Faculties: Faculty of Medicine	0.15	1.41 (0.89-2.25)
Insomnia symptoms	Academic degree: - Assistant lecturer	0.80	1.14 (0.42-3.06)
	- Lecturer	0.67	0.71 (0.15-3.43)
	- Assistant professor	0.21	3.46 (0.49-23.94)
	- Professor	0.32	3.67 (0.28-47.37)
	Sex: Female	0.72	1.15 (0.55-2.40)
	Duration of work/years	0.02*	0.87 (0.78-0.98)
	Group of workers: - Compulsive workers	0.02*	4.19 (1.28-13.18)
	- Hard workers	0.71	1.71 (0.39-7.36)
	- Workaholics	0.19	2.35 (0.71-7.79)
	Faculties: Faculty of Medicine	0.001*	5.58 (1.67-18.65)
Difficulty awakening in the morning	Academic degree: - Assistant lecturer	0.78	1.10 (0.55-2.21)
	- Lecturer	0.07	0.49 (0.23-1.06)
	- Assistant professor	0.99	1.01 (0.35-2.92)
	- Professor	0.58	0.69 (0.18-2.65)
	Sex: Female	0.69	1.10 (0.69-1.76)
	Duration of work/years	0.04*	0.95 (0.90-1.00)
	Group of workers: - Compulsive workers	0.97	1.02 (0.541.94)
	- Hard workers	0.80	1.30 (0.63-2.68)
	- Workaholics	0.07	2.16 (1.12-4.15)
	Faculties: Faculty of Medicine	0.01*	1.83 (1.15-2.93)
Tiredness awakening In the morning	Academic degree: - Assistant lecturer	0.29	1.42 (0.74-2.74)
	- Lecturer	0.08	0.50 (0.23-1.09)
	- Assistant professor	0.91	0.94 (0.32-2.73)
	- Professor	0.56	0.66 (0.16-2.67)
	Sex: Female	0.14	1.41 (0.89-2.24)
	Duration of work/years	0.13	0.96 (0.91-1.01)
	Group of workers: - Compulsive workers	0.77	1.09 (0.58-2.08)
	- Hard workers	0.23	0.71 (0.34-1.48)
	- Workaholics	0.61	1.32 (0.71-2.48)
	Faculties: Faculty of Medicine	<0.001*	2.63 (1.61-4.29)

OR, odds ratio; CI, confidence interval; *significant difference; Academic degree: demonstrator (reference); Sex: male (reference); Group of workers: relaxed workers (reference); Faculties: Faculty of Arts (reference).

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Availability of data and materials: The datasets used and analyzed during the current study are available from the corresponding author on reasonable request.

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