Study of occupational stress in employees of medical and preventive institutions

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Abstract: Introduction: The contemporary work place creates a challenge towards physicians and their teams. They are forced into a situation, in which to be competitive they must have skills outside of their medical specialty, such as health management, pedagogy, information and communication technologies. Aim: To analyze the level of stress and burn-out among the medical employees in the hospital care. Materials and methods: An adapted 55 question questionnaire were used and analyzed with One-way ANOVA, Correlation and multiple regression analysis in SPSS. Results and discussion: Despite the physicians and their teams reporting high levels of workload and stress, the satisfaction from work hasn't diminished and the evaluation for the quality of provided work is still high. Additional research into the topic is required with focus on comparison between hospital physicians and primary care physicians.

Keywords: stress, burnout, medical professionals

Introduction: Contemporary medicine is characterized by intensive development in science and technologies, a well as increased competition between different participants in the health service market. The elevated requirements for knowledge, skills expertise and organizational behavior towards medical specialists leads to consistent professional stress.

Work place stress has consequences on personal, interpersonal and organizational level and requires high adaptational capacity in medical workers to overcome. The current pandemic has only increased the strain and pressure on the healthcare work force and burnout had become a common problem that must be addressed.

Even without the pandemic the medical profession is stressful. The long hours, night shifts, constant need to update your knowledge, uncertainties during procedures and medical errors build up. This pressure is initially "invisible", but if measures are not taken could lead to severe symptoms and even diseases [4]. Burnout is defined as a psychological syndrome that may emerge when employees are exposed to a stressful working environment with high job demands and low resources[5]. In the medical field burnout is even more problematic, as it endangers both the health and

well-being of the healthcare worker and the patients, due to decrease in quality of care and higher chance of medical error [3].The existing literature on the subject lists death and suffering of patients, insufficient training, conflict with colleagues, lack of social support, excessive workload and uncertainty about a treatment given as the major stress factors for nurses [2]. The major stress factors for physicians are physicians the factors are e time pressure, conflict between career and family, delayed gratification, loss of autonomy and in some cases research and teaching activities [6]. Physician assistants, medical technicians and administrative staff demonstrate highest association with stress the following factors - job strain, overcommitment and socialsupport [1]

Aim: To analyze the level of stress and burn-out among the medical employees in the hospital care

Materials and methods:

Healthcare professionals from 3 private, municipal and regional hospitals in Bulgaria participated. All questionnaires were filled after informed consent, during the time period January - March 2021. Out of the 44 returned 41 were finished correctly and usable, with a return rate of 93%.

The questionnaire included gender, age, work experience, marital status, current position, working hours, night shifts work and several perceived scales on how work has affected them. Each item was graded on a 5-point scale (1- strongly disagree, 2 - disagree, 3 - uncertain, 4 - agree, 5 - strongly agree).

One-way analysis of variance was used for the analysis of burnout according to the sociodemographic information, profession, work conditions and level of job strain. Correlation analysis was performed to analyze the relationships among independent variables influencing burnout. Multiple regression analysis for different models was performed to identify the factors influencing work-related burnout. All calculations were performed using a software SPSS V.16, with the level of significance set at $p<0.05$.

Results and discussion:

The participants were mainly female - 75.6%, with nurses slightly outnumbering physicians - 51,2% for the former, to 48,8% for the latter. Mean age was 46,6 years, with mean working experience 22,5 years. More than half were married - 56,1%. Participants were predominantly in surgical specialties - 68,3% and working in municipal hospitals - 73,2%. (Table 1)

Table 1.

Characteristics of participants

Factor		N	Percent
Gender	Male	10	24,4
	Female	31	75,6
Age	<30	3	7,3

	30-40	7	17,1
	40-50	13	31,7
	50-60	10	24,4
	>60	8	19,5
Marital status	Married	23	56,1
	Single	18	43,9
Profession	Physician	20	48,8
	Nurse	21	51,2
Work experience	<5	4	9,8
	5-10	2	4,9
	10-15	4	9,8
	15-20	7	17,1
	20-25	3	7,3
	25-30	5	12,2
	>35	16	39,0
Specialty type / department	Surgical	28	68,3
	Internal	13	31,7
Workplace	Regional hospital	11	26,8
	Municipal hospital	30	73,2
	Private hospital	0	0
Day / Night shifts	Yes	35	85,4
	No	6	14,6
24-hours on call	Yes	23	56,1
	No	18	43,9

During the One-way ANOVA and Correlation analysis the following factors showed statistically significant influence on stress and burn-out:

Age - Older people felt more emotionally depleted *(p<0,001, Pearson Correlation=0,535)*, that their work is destroying them *(p=0,002, Pearson Correlation=0,525)*, at the end of their strength *(p=0,004, Pearson Correlation=0,471)*, additional stress from changes *(p=0,003, Pearson Correlation=0,557)*, constantly tired and working at reduced speed *(p<0,001, Pearson Correlation=0,645)*, complained of lack of interest in working *(p=0,003, Pearson Correlation=0,580)* and headaches *(p=0,003, Pearson Correlation=0,490)*, problems with sleep *(p<0,001, Pearson Correlation=0,676)*, felt meeker *(p<0,001, Pearson Correlation=0,597)* and increased alcohol consumption *(p<0,001, Pearson Correlation=0,684)*

Profession - nurses are more stressed from administrative work *(p=0,001, Pearson Correlation=0,483)*, penalty fines*(p<0,001, Pearson Correlation=0,598)* and feel their effectiveness reduced *(p=0,003, Pearson Correlation=0,453)*.

Work experience - healthcare workers with more experience find increasingly stressful working with people *(p=0,001, Pearson Correlation=0,543)*, frequent changes in the working rules *(p<0,001, Pearson Correlation=0,539)*, constantly tired and working at reduced speed *(p=0,001, Pearson Correlation=0,587)* and that stress has increased in the workplace *(p<0,001, Pearson Correlation=0,633)*, problems with sleep *(p<0,001, Pearson Correlation=0,590)*, increased alcohol consumption

(p<0,001, Pearson Correlation=0,641) and they feel more critical toward themselves *(p=0,001, Pearson Correlation=0,430)*

Workplace - participants working in smaller hospital find scientific work *(p=0,001, Pearson Correlation=-0,519)*, lack of perspective *(p<0,001, Pearson Correlation=-0,589)* and insufficient payment *(p<0,001, Pearson Correlation=-0,773)* more stressful

24-hour availability - those who give 24-hour shifts are more stressed about unethical behavior from colleagues *(p=0,002, Pearson Correlation=0,472)*

Gender, marital status, specialty have no statistically significant influence on the stress of the participants according to the questionnaire. Oddly enough giving day and/ or night shifts and weekend shifts also did not influence stress levels.

The factor found having statistically significant effect were then run through a Multiple regression analysis. Age lost its significance and was close to affecting only sleep *(p=0,053, 95%CI = -0,004;0,570)*, profession also lost its significance and was close to affecting only stress from penalty fines *(p=0,025, 95%CI = -0,093;0,195)*. Work experience and workplace retained their statistical significance for additional stress from working with people too much*(p=0,005, 95%CI = -0,256;1,282)* and insufficient payment *(p<0,001, 95%CI = -0,356;0,133)* respectively.

Conclusion and discussion: This are just preliminary results from a pilot study. We are still collecting questionnaires from hospitals from all over the country and while the number of participants is relatively small it shows interesting correlations. Burnout is a serious problem, especially in the medical field, which should not be underestimated. The pandemic further exacerbates the situation and pushes healthcare workers to the brink of their abilities. Further research on the topic is needed and we are continuing our work on it.

References

1. Chou LP, Li CY, Hu SC. Job stress and burn out in hospital employees: comparisons of different medical professionsin a regional hospitalin Taiwan. BMJ open. 2014 Feb 1;4(2).

2. Gray-Toft P, Anderson JG. Stress among hospital nursing staff: its causes andeffects. SocSciMed A 1981;15:639-47.

3. Klein J, GrosseFrie K, Blum K, etal. Burn outand perceived quality of carea mong German clinician sinsurgery. Int J Qual Health Care 2010;22:525-30

4. Maslach C, Schaufeli WB. Historical and conceptual development of burnout. ProfBurnout 1993:1-16.

5. Maslach C, Schaufeli WB, Leiter MP. Job burnout. Annu Rev Psychol 2001;52:397-422

6. Siu C, Yuen SK, Cheung A. Burnout among public doctors in Hong Kong: cross-sectional survey. Hong Kong Med J 2012;18:186-92.

7. Nasretinova M., Karabaev K., Nabiev O. Investigation of infectious and vascular factors in the genesis of positional paroxysmal nystagmus //Authorea Preprints. - 2020.

8. Rana A. Q., Morren J. A. Dizziness and Vertigo //Neurological Emergencies in Clinical Practice. - Springer, London, 2013. - С. 25-35.

9. Slaveykov, K. S., Stoyanov, V. K., & Trifonova, K. Z. (2023). Professional stress and burnout syndrome during the Covid pandemic in the medical field. Indian Journal of Occupational and Environmental Medicine, 27(1), 59.

10. Chou, L. P., Li, C. Y., & Hu, S. C. (2014). Job stress and burnout in hospital employees: comparisons of different medical professions in a regional hospital in Taiwan. BMJ open, 4(2), e004185.

11. Espinosa-Sanchez, J. M., & Lopez-Escamez, J. A. (2020). The pharmacological management of vertigo in Meniere disease. Expert Opinion on Pharmacotherapy, 21(14), 1753-1763.