

Article

Features of Personality and Burnout Syndrome of Medical Practitioners

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Abstract: This observational study was ordered by the Medical Practitioners' Chamber in Warsaw. The objective of the study was to evaluate the health status of physicians in relation to their occupational duties. Professional burnout was considered relative to different features of personality. This study was initially carried out from 2005–2008, but further analysis of burnout and personality was carried out from 2017–2018. The research tools were anonymous, validated questionnaires. The sample size was based on the size of the population— the registry of the Regional Chamber of Medical Practitioners— and literature on burnout prevalence. The respondents' work places were randomly selected from the Mazovian District register. The test on burnout was completed by 378 respondents, while 62 subjects completed a personality test. Results showed that burnout syndrome was an occupational problem for healthcare workers. Professional burnout affected as many as 42% of respondents ($n = 158$). It affected two age groups in particular: physicians up to 31 years old and individuals aged 41-50. Moreover, neuroticism was found to be significantly related to burnout syndrome. In conclusion, burnout syndrome is common among medical practitioners, and neuroticism may be correlated with burnout syndrome.

Keywords: mental health; health service research; burnout; public health; physicians

1. Introduction

This study aimed to diagnose burnout in a group of medical practitioners and analyze the correlation between burnout syndrome and personality features. Burnout syndrome affects individuals who are involved in occupations associated with services crucial to society. This has distinct implications for medical practitioners, patients, and managers of healthcare system institutions[1,2]. This paper is primarily focused on the consequences of burnout syndrome, also

known as exhaustion syndrome or burnout effect. This phenomenon is not only an individual psychological problem but also as a social problem[3–5].

Burnout syndrome might occur in individuals who practice occupations human service professions which are occupations that demand complete dedication, close interpersonal contact, and a professional attitude. Of these, professionalism is fundamental to job performance. Burnout typically affects professionals such as teachers, physicians, nurses, therapists, social workers, police officers, or priests[6]. Burnout syndrome is also seen in performance-oriented individuals who dedicate themselves entirely to work. Sometimes, the problem is referred to as an “excessive dedication disease [7].”

Currently, many researchers believe that job-related stress, which results from a mismatch between the requirements of the job and the individual’s resources, accounts for the development of burnout syndrome and is a precondition for its occurrence [4]. Şek asserts that the generalized and repeated failures experienced by an individual trying to overcome stress at work are of crucial to the development of burnout syndrome [8]. In the case of medical practitioners [4], stress may result from the conditions in which they perform their work (e.g. work organization, time pressure, red tape, and inadequate remuneration), interpersonal factors (e.g. relationships with other staff members, interactions with patients, and communication with families of patients), individual factors (e.g., self-esteem, sense of effectiveness, sense of control, and reactivity). Anczewska and colleagues reviewed the results of prior research and noted that the impact of individual factors on the development of burnout syndrome has not been researched as often as the impact of situations. Even less research analyzed the relationship between burnout syndrome and personality features such as hardiness, external control, avoidance of stress, low self-esteem, and high levels of neuroticism[9].

Additionally, the relationship between individual factors, specifically personality factors, and burnout were analyzed. In psychology, personality is a theoretical structure used to describe the general features of an individual. These include behaviors, hobbies, attitudes, and specific features that define how an individual reacts[10]. There are many definitions and theories related to this notion. One of the best-known was developed by Costa and McCrae. The Five-Factor Model of Personality posits the existence of five basic personality features, neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience. The NEO-Five Factor Inventory (NEO-FFI) is used to evaluate these traits and is often used in empirical research[11–13]. This paper evaluated how these “Big Five” personality traits relate to burnout.

2. Materials and Methods

The respondents of this study were 445 medical practitioners registered with the Regional Chamber of Medical Practitioners. Of those 445 practitioners, 378 were administered the Burnout Scale (BOS, *Skala Wypalenia Sił – Polish version*), while 62 individuals were administered the personality test (NEO-FFI). The distribution of NEO-FFI questionnaires was limited to a small group of respondents (20%). The size of the sample was estimated based on the assumption that approximately 30% of the entire group experienced the burnout effect[14,15]. The estimation precision was 5%. Given the criteria, the minimum sample size was 320 individuals. Before conducting this study, a pilot study was first executed (focused on testing the methodology and scope). As for ethical considerations, the Regional Chamber of Physicians granted ethics approval. Before answering the questionnaires, respondents were told that the survey was voluntary and anonymous. Afterward, they were asked to provide informed consent.

The BOS is a Polish test developed by Steuden and Okła and was used in this study to appraise the extent of burnout. The tool is designed for occupationally active adults and is composed of 66 statements that represent five factors: emotional control reduction, loss of dedication, reduction of action effectiveness, narrowing of interpersonal relations, and physical fatigue. Respondents evaluated each of the statements using a five-point scale, where five was the highest grade and indicated maximum intensity of the negative condition, and one indicated that

the situation/condition described by a given statement did not exist with reference to the respondent. Factors I and II appraised the extent to which an individual his or her emotional ability to handle situations related to their job. Factor III described dissatisfaction with the actions that were taken and a lack of measurable effort on the part of the individual. Factor IV indicated an unwillingness to initiate contact with others. Finally, Factor V established the extent of physical fatigue. These five factors provided a way to appraise the degree to which impacted an individual's functioning in the workplace. Unprocessed results were the total points within each scale. The lowest score possible was 66, while the highest score possible was 330. There were no standard values and interpretations, so unprocessed results were used for description. The theoretical average was 132, and the standard deviation was set as 8. Sten scores were used to evaluate the results. The BOS test produces similar results to other burnout measurement tools, such as the Maslach Burnout Inventory (MBI) test [16]. The demographics of the participants who answered this tool are presented in Table 1.

Table 1. Respondent Characteristics: gender and age.

BOS Test – filled in correctly	Gender						
	Females			Males		no data	
	N	n	%	n	%	n	%
No	67	37	67.3	18	32.7	12	17.9
Yes	378	186	60.8	120	39.2	72	19.0
Total	445	223	61.8	138	38.2	84	18.9
	Age						
	N	Average	SD	Median	Min	Max	no data
	No	38	49.8	16.8	46	26	79
Yes	222	46	11.5	46	27	80	156
Total	260	46.6	12.4	46	26	80	185

The Polish adaptation of the NEO-FFI used in this study was developed by Zawadzki, Strelau, Szczepaniak, and Śliwińska. This questionnaire is designed to diagnose the personality features of adults aged 15 and older. The questionnaire is comprised of 60 items: five scales with 12 items each. Each of the answers was graded from zero to four points, where a higher result indicated a greater intensity of a given feature. Unprocessed indicators were transformed into sten scores. Separate standards were followed based on gender (females and males) and age (five age categories: 15 - 19, 20 - 29, 30 - 39, 40 - 49, 50 - 80). The results were categorized as follows: 1 to 3 stens were low, 4 to 6 were moderate, and 7 to 10 were high [11].

Finally, the correlation between the results of the BOS and NEO-FFI questionnaires was assessed using Pearson's linear correlation and Spearman rank correlation. For all analyses, a level of significance of $\alpha=0.05$ was adopted. Calculations were made using the SPSS 12.0 statistical package.

3. Results

The analysis revealed that among 378 medical practitioners, 158 (42%) were affected by burnout syndrome. Individuals 25 to 31 years and 41 to 50 years were especially affected by burnout syndrome. No correlation was demonstrated between burnout syndrome and the gender of respondents.

Within each scale, the BOS and NEO-FFI displayed different types of relationships. An analysis of the correlation matrix showed a statistically significant positive association among all components of the BOS ($p<0.001$ for correlations); meanwhile, the correlation among components of the NEO-FFI scale was weak. The correlation between some pairs of measures was not statistically significant, and the absolute values of coefficients were small. Neuroticism and extraversion were negatively correlated ($p = 0.001$), while extraversion, openness, and agreeableness were positively

correlated ($p = 0.036, 0.001$ and 0.008 for statistical assessment of correlations). Neuroticism was not correlated with other components. However, the results in Table 2a and Table 2b demonstrate that neuroticism showed an association with all components of the BOS. Therefore, the higher the level of neuroticism, the higher the level of burnout factors. No other statistically significant correlations were found between the scales.

Table 2. a. Correlation Between the Extent of Burnout and Features of Personality: Burnout Problem versus Features of Medical Practitioners' Personality ($N = 395$).

		Emotional Control	Effective activity	Commitment	Interpersonal contacts	Physical Fatigue	Burn Out Scale	Neuroticism	Extraversion	Openness	Agreeableness	NEO-FF
Emotional Control	N	395	395	395	395	395	395	395	395	395	395	395
	Rho	-	0.747	0.712	0.736	0.650	0.917	0.737	-0.194	-0.049	-0.064	0.010
	p	-	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.242	0.772	0.701	0.953
Effective activity	N	395	395	395	395	395	395	395	395	395	395	395
	Rho	0.747	-	0.732	0.631	0.570	0.858	0.739	-0.281	0.036	0.089	-0.208
	p	<0.001	-	<0.001	<0.001	<0.001	<0.001	<0.001	0.088	0.828	0.595	0.21
Commitment	N	395	395	395	395	395	395	395	395	395	395	395
	Rho	0.712	0.732	-	0.651	0.526	0.827	0.637	-0.284	-0.174	-0.282	0.052
	p	<0.001	<0.001	-	<0.001	<0.001	<0.001	<0.001	0.084	0.296	0.086	0.754
Interpersonal contacts	N	395	395	395	395	395	395	395	395	395	395	395
	Rho	0.736	0.631	0.651	-	0.616	0.805	0.710	-0.190	-0.171	-0.254	0.039
	p	<0.001	<0.001	<0.001	-	<0.001	<0.001	<0.001	0.253	0.304	0.123	0.818
Physical Fatigue	N	395	395	395	395	395	395	395	395	395	395	395
	Rho	0.650	0.570	0.526	0.616	-	0.709	0.734	-0.134	0.027	-0.068	0.045
	p	<0.001	<0.001	<0.001	<0.001	-	<0.001	<0.001	0.423	0.874	0.683	0.79
Burn Out Scale	N	397	397	397	397	397	397	397	397	397	397	397
	Rho	0.917	0.858	0.827	0.805	0.709	-	0.770	-0.244	-0.085	-0.145	-0.002
	p	<0.001	<0.001	<0.001	<0.001	<0.001	-	<0.001	0.139	0.611	0.385	0.991

Table 2. b. Correlation Between the Extent of Burnout and Features of Personality: Burnout Problem versus Features of Medical Practitioners' Personality ($N = 395$).

		Emotional Control	Effective activity	Commitment	Interpersonal contacts	Physical Fatigue	Burn Out Scale	Neuroticism	Extraversion	Openness	Agreeableness	NEO-FF
Neuroticism	N	62	62	62	62	62	62	62	62	62	62	62
	Rho	0.737	0.739	0.637	0.710	0.734	0.770	-	-0.421	0.037	-0.102	-0.093
	p	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	0.775	0.429	0.472

Extraversio n	N	62	62	62	62	62	62	62	62	62	62	62
	Rho	-0.194	-0.281	-0.284	-0.190	-0.134	-0.244	-0.421	-	0.268	0.398	0.319
	p	0.242	0.088	0.084	0.253	0.423	0.139	0.001	-	0.036	0.001	0.011
Openness	N	62	62	62	62	62	62	62	62	62	62	62
	Rho	-0.049	0.036	-0.174	-0.171	0.027	-0.085	0.037	0.268	-	0.334	0.113
	p	0.772	0.828	0.296	0.304	0.874	0.611	0.775	0.036	-	0.008	0.38
Agreeablen ess	N	62	62	62	62	62	62	62	62	62	62	62
	Rho	-0.064	0.089	-0.282	-0.254	-0.068	-0.145	-0.102	0.398	0.334	-	0.331
	p	0.701	0.595	0.086	0.123	0.683	0.385	0.429	0.001	0.008	-	0.009
NEO-FFI	N	62	62	62	62	62	62	62	62	62	62	62
	Rho	0.010	-0.208	0.052	0.039	0.045	-0.002	-0.093	0.319	0.113	0.331	-
	p	0.953	0.21	0.754	0.818	0.79	0.991	0.472	0.011	0.38	0.009	-

4. Discussion

The BOS test was able to estimate the prevalence and severity of burnout among medical practitioners in Mazovian region, Poland. Comparable results have been found in other countries. In the United States, research conducted by Merritt Hawkins on behalf of The Physicians Foundation demonstrated that 78% of the 8,774 medical practitioners surveyed displayed typical burnout symptoms[17]. Some discrepancies exist between the results of this study and those of Merritt Hawkins'. These discrepancies come from the difference in assessment tools. This study used a diagnostic tool, while Merritt Hawkins used a self-assessment tool that directly asked respondents how often they have feelings of professional burnout in their medical career. Despite these discrepancies, it is undeniable that burnout poses a serious threat to the healthcare system. These claims echo those of a report by the Harvard T.H. Chan School of Public Health, Harvard Global Health Institute, Massachusetts Medical Society, and Massachusetts Health and Hospital Association[1].

Similar to the results found by Merritt Hawkins, the study sponsored by the Harvard School of Public Health asserted that burnout can lead to early retirement or departure from medicine altogether[1, 17].

Among the respondents of this study, the extent of burnout corresponded to the level of neuroticism. Neuroticism is defined as a tendency to react to stressful events with much "negative affectivity and emotional distress [18]." Moreover, it results in the perception of certain situations as job-related burdens[19]. Many experts in the field of research on burnout problems emphasize this correlation[6, 20, 21].

Conversely, some argue that the correlation between personality structure and burnout syndrome cannot be categorically demonstrated, but co-occurrence of burnout, neuroticism, and introversion may be related to other factors [22]. Some scientists believe that, to a considerable extent, neuroticism is an inheritable trait. However, the impact of environmental factors is also important. Moreover, neuroticism is considered to be one of the most important phenomena in public health, since, as Lahey claims, it seems to be correlated with a broad spectrum of mental and physical health problems[23]. For example, neuroticism may be considered a risk factor for the development of traumatic stress following exposure to critical situations[19].

In this study, neuroticism demonstrated correlation with all components of the BOS: emotional control reduction, loss of dedication, reduction of action effectiveness, narrowing of interpersonal relations, and physical fatigue. This may be related to the negative emotionality mentioned above, since neuroticism is typically accompanied by irritation, loss of interest in work, negative attitudes towards the environment, and feelings of overload and fatigue[24]. Neuroticism also affects both perception of and techniques used to handle stress. The extent of the inability to

adapt and/or of emotional imbalance is demonstrated by the tendency to experience negative emotions (fear, anger, and guilt) and sensitivity to psychological stress (perception). Highly neurotic individuals react intensely to stress and handle it through avoidance and negation[25]. Burnout also impacts the quality and effectiveness of work output; this, in turn, is related to social costs, since a burnt-out employee is less dedicated to work and less effective in terms of work performance. This might result in decreased patient satisfaction and increased occurrence of medical malpractice, which may threaten the health of patients [26].

The negative consequences of burnout syndrome have been explained. As such, it is important to develop policies to reduce its occurrence. Burnout syndrome may be a consequence of stress experienced in the workplace. Thus, stress prevention might prevent burnout syndrome. As part of primary prevention, it is proposed that work conditions and organizations be improved. Secondary prevention includes the development of various staff competencies. For example, individuals may be taught stress-handling techniques. Tertiary prevention includes providing support to employees who experience intensive stress or health problems as a consequence of stress [27]. Prevention and attempts to overcome burnout syndrome might take place at the individual or institutional levels[28]. Anczewska and colleagues have found that educational programs and workshops focused on identifying and coping with burnout have been developed in Poland and around the world. The employee rejuvenation and retention(ER&R) program developed by Cole is an example. Employer responsibilities, including demonstration of gratitude, recognition of outstanding performance, and definition of occupational roles, may help mitigate stress [9,29].

In the healthcare setting, work may be improved through the optimal allocation of patients to each doctor and an appropriate organization of the workplace (e.g. break time, time for passive relaxation, effective work shift rotations, shorter working hours, aesthetically pleasing workplace, and proper lighting.). Other proposed solutions include backing up support groups, organizing problem-solving meetings that enable an exchange of viewpoints and assessment of difficulties, and offering training in relaxation techniques and interpersonal skills [9].

Among this study's respondents, two age groups were found to be the most affected by burnout syndrome: those 25 to 31 years and 41 to 50 years. This may be due to the tension at work experienced by young medical practitioners. It is believed that the most difficult challenge for young general practitioners (GP) is relationship with patients [30]. These conflicts become a source of stress and lead to burnout upon extended exposure. Older medical practitioners, on the other hand, might experience stress related to the simultaneous fulfillment of occupational and familial duties.

As such, young GPs should focus on developing communication and assertiveness skills, since their patients are often older individuals, and younger GPs might have a problem communicating with them regarding appointment schedules, unnecessary visits, test instructions, and medication prescriptions. For older medical practitioners, emphasis should be placed on communicating and coping with feelings of stress, since this group experiences self-destructive reactions to stress more frequently. These include addiction, excessive work, and a lack of balance between work and personal life[31].

Some authors propose that focus be placed on measures of personality by "BIG five" , especially on neuroticism. Furthermore, they assert that neuroticism might be more flexible and sensitive to direct interventions than believed in the past[32]. There are very few research papers concerning the effectiveness of interventions to reduce the level of neuroticism. Nevertheless, in a randomized pilot study, researchers found that the level of neuroticism decreased after administering an intervention founded on mindfulness-based cognitive therapy (MBCT) [33].

Australian medical practitioners acknowledge the problems caused by burnout and propose changing the text of the Hippocratic Oath. These practitioners claim that the current wording of the Oath contributes to the dissemination of burnout effect in the environment of medical practitioners. An updated version of the Oath is expected to have a statement declaring that one's duty is not limited to the health of patients, but also extends to one's own mental and

physical health. Similar provisions have also been incorporated into the Genève Declaration (amended in 2017), in what is known as the Modern Hippocratic Oath. To provide patients with top-quality medical services, medical practitioners should not neglect the care of their own moods, comfort, and health[34].

5. Conclusions

In this study, the BOS test was used to measure burnout among medical practitioners. Future studies may use sten scores to grade individuals on the BOS. Upon analysis of the scores of medical practitioners on both tests the BOS and NEO-FFI, the researchers found that neuroticism correlated with burnout syndrome. Additionally, occupational overload and neurotic personality features contributed to professional burnout. Both neuroticism and burnout have implications on human resources in the healthcare sector. Currently, managing burnout among healthcare practitioners is still a major challenge for physicians and medical education programs across the globe.

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References

1. Jha, A.K.; Iliff, A.R.; Chaoui, A.A.; Defosse, S.; Bombaugh, M.C.; Miller, Y.R.: A Crisis in health care: A call to action on physician burnout. <http://www.massmed.org/News-and-Publications/MMS-News-Releases/Physician-Burnout-Report-2018/>(accessed on 21February 2019).
2. Świątkowska, B. Zagrożenia zawodowe pracowników opieki zdrowotnej; Co wiemy i co możemy zrobić? Occupational hazards of healthcare workers: What is known and what can be done. *Probl Hig Epidemiol* **2010**, *91*, 522-529.
3. Kulik, M.M. Cierpienie, które przerasta czyli o wypaleniu lekarzy pracujących z ludźmi przewlekle chorymi. *Studia z Psychologii w KUL*. **2008**, *15*, 81-112.
4. Pustulka-Piwnik, U.; Ryn, Z.; Krzywoszański, Ł.; Stożek, J. Zespół wypalenia zawodowego u fizjoterapeutów a zmienne demograficzne i organizacyjne. Burnout syndrome of physical therapists - demographic and organizational factors. *Medycyna Pracy* **2014**, *65*, 453-462.
5. Śliwiński Z.; Starczyńska, M.; Kotela, I.; Kowalski, T.; Kryś-Noszczyk, K.; Lietz-Kijak, D.; Kijak, E.; Makara-Studzińska, M. Life satisfaction and risk of burnout among men and women working as physiotherapists. *International Journal of Occupational Medicine and Environmental Health* **2014**, *27*, 400-412.
6. Maslach, C.; Schaufeli, W.B.; Leiter, M.P. Job burnout. *Annual Review of Psychology* **2001**, *52*, 397-422.
7. Sapilak, B.J.; Kurpas, D.; Steciwko, A.F.; Melon, M; Wypalenie zawodowe personelu medycznego – problem wciąż aktualny. Metody oceny i przeciwdziałania w ramach oddziałów dializacyjnych. *Problemy Lekarskie* **2006**, *45*, 81-3.
8. Sęk, H. ed. Wypalenie zawodowe przyczyny, mechanizmy, zapobieganie. Warszawa, PWN, **2000**, 1-256.

9. Anczewska, M.; Świtaj, P.; Roszczyńska, J. Wypalenie zawodowe. Occupational burn-out. *Postępy Psychiatrii i Neurologii* **2005**, *14*, 67-77.
10. Grabski, B.; Gierowski, K.; Zaburzenia osobowości – różne spojrzenia i próby ich integracji. Personality disorders – different outlooks and attempts at their integration. *Psychiatria Polska* **2012**, *66*, 829-44.
11. Zawadzki, B.; Strelau, J.; Szczepaniak, P.; Śliwińska, M. Inwentarz osobowości NEO-FFI Costy i McCrea (Polska adaptacja - podręcznik). Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego, **1998**.
12. De La Fuente-Solana, E.I.; Urquiza, J.L.G.; Cañadas, G.R.; Albendin, L. Burnout and its relationship with personality factors in oncology nurses, *European Journal of Oncology Nursing*, **2017**, *30*, 91-99.
13. Cano-Garcia, F.; Muñoz, P.; Carrasco, M. Personality and contextual variables in teacher burnout. *Personality and Individual Differences* **2005**, *38*, 929-940.
14. Rotenstein, L.,S.; Torre, M.; Ramos, M.,A.; et al. Prevalence of Burnout Among Physicians: A Systematic Review. *JAMA*, **2018**, *320*(11),1131–1150, doi:10.1001/jama.2018.12777
15. Soler, J.,K.; Yaman, H.; Esteva, M.; et al. Burnout in European family doctors: The EGPRN study. *Family Practice*, **2008**, *25*. 245-65. 10.1093/fampra/cmn038.
16. Steuden, S.; Okła, W. ed. Tymczasowy podręcznik do skali wypalenia sił wersja eksperymentalna. Lublin: Zakład Psychologii Klinicznej KUL **1998**.
17. 2018 Survey of America's Physicians: Practice Patterns and Perspectives The Physicians Foundation by Merritt Hawkins. Available online: <https://physiciansfoundation.org/wp-content/uploads/2018/09/physicians-survey-results-final-2018.pdf> (accessed on 21 February 2019).
18. Ceobanau, N.C.; Mairean, C. The Relation between Personality Traits, Social Support and Traumatic Stress. *Revista de Cercetare si Interventie Sociala* **2015**, *48*, 17-31.
19. Newbury-Birch, D.; Kamali, F. Psychological stress, anxiety, depression, job satisfaction, and personality characteristics in preregistration house officers. *Postgrad Med J*, **2001**, *77*, 109-111.
20. Bühler, K. E.; Land, T. Burnout and personality in extreme nursing: an empirical study. *Schweizer Archiv für Neurologie und Psychiatrie* **2004**, *155*, 35-42.
21. Shimizutani, M.; Odagiri, Y.; Ohya, Y.; Shimomitsu, T.; Kristensen, T. S.; Maruta, T.; Iimori, M. Relationship of Nurse Burnout with Personality Characteristics and Coping Behaviors. *Industrial Health* **2008**, *46*, 326–335.
22. Walkiewicz, M., Sowińska, K., Taras, M. Wypalenie zawodowe wśród personelu medycznego - przegląd literatury. Burnout in medical profession - a literature review. *Przegląd Lekarski* **2014**, *71*, 263-269.
23. Lahey, B. B. Public Health Significance of Neuroticism. *Am Psychol* **2009**, *64*, 241–256.
24. Poraj, G.; Osobowość jako predyktor zawodowego wypalania się nauczycieli. *Medycyna Pracy* **2009**, *60*, 273–282.
25. Schneider, T; The role of neuroticism and psychosocial stress responses. *Journal of Experimental Social Psychology* **2004**, *40*, 795-804.
26. Leiter, M. P.; Harvie, P.; Frizzell, C. The Correspondence of Patient Satisfaction and Nurse Burnout. *Soc Sci Med* **1998**, *47*, 1611–1611.
27. Vahey, D. C.; Aiken, L. H.; Sloane, D. M.; Clarke, S. P.; Vargas, D. Nurse Burnout and Patient Satisfaction. *Med Care* **2004**, *42*, 57-66.
28. Waszkowska, M.; Merecz, D.; Drabek, M. Programy prewencji stresu zawodowego - strategie, techniki, ocena skuteczności. Część II. Prewencja stresu zawodowego na poziomie organizacji. *Medycyna Pracy* **2010**, *61*, 191–204.
29. Cole, J.; An ounce of prevention beats burnout. *HR Focus* **1999**, *76*, 6, 13.
30. de Bever, S.; van Rhijn, S.,C.; van Dijk N.; et al. Professionals' perspectives on factors affecting GP trainees' patient mix: results from an interview and focus group study among professionals working in Dutch general practice. *BMJ Open*. **2019**, *9*, 12. :e032182. Published 2019 Dec 15. doi:10.1136/bmjopen-2019-032182
31. Medscape National Physician Burnout & Depression Report 2018 <https://www.medscape.com/slideshow/2018-lifestyle-burnout-depression-6009235> (accessed on 20 February 2019).
32. Barlow, D. H.; Sauer-Zavala, S.; Carl, J. R.; Bullis, J. R.; Ellard, K. K. The Nature, Diagnosis, and Treatment of Neuroticism. *Clinical Psychological Science* **2013**, *2*, 344–365.

33. Armstrong, L.; Rimes, K. A. Mindfulness-Based Cognitive Therapy for Neuroticism (Stress Vulnerability): A Pilot Randomized Study. *Behavior Therapy* **2016**, *47*, 287–298.
34. Nowosielska, K. Przysięga Hipokratesa do zmiany, by lekarz pamiętał, że ma odpoczywać <https://www.prawo.pl/zdrowie/zmiana-przysiegi-hipokratesa-by-lekarz-pamietal-ze-ma-odpoczywac,368685.html> (accessed on 22 February 2019).