

BURNOUT AND STRESS IN GROUP OF PSYCHIATRISTS: WORKLOAD AND NON-PROFESSIONAL-SOCIAL PREDICTORS

ANTONI WONTORCZYK¹, BERNADETTA IZYDORCZYK², and MARTA MAKARA-STUDZIŃSKA³

Jagiellonian University, Kraków, Poland

¹ Institute of Applied Psychology, Faculty of Management and Social Communication

² Faculty of Philosophy, Institute of Psychology

³ Collegium Medicum

Abstract

Objectives: The aim of this research is to present the search for psychosocial predictors explaining the strength of perceived stress in psychiatrists and the search for associations between stress and occupational burnout in psychiatrists. The authors also searched for associations between organizational, workload, family and non-professional – social factors and the intensity of occupational stress. **Material and Methods:** The group of 131 doctors – specialists in psychiatry, aged 27–86 years – took part in the study. The participants completed 3 questionnaires, i.e., the *Sociodemographic Questionnaire*, the *Link Burnout Questionnaire* (LBQ) and the *Perceived Stress Scale* (PSS-10). **Results:** The results indicated that significant predictors of the development of occupational stress for psychiatrists were psychophysical exhaustion and lack of a sense of professional efficacy. Taking holidays (several times a year, pursuing the passions and interests), and having a stable family relationship (marriage or civil partnership) were also prominent among the predictors of stress. **Conclusions:** Occupational stress and burnout in the work of the surveyed psychiatrists appeared to be a high intensity phenomenon. These results indicate the need to spread preventive health care also in the work of psychiatrists. Mainly in terms of maintaining the right balance between work and rest, which can help to reduce stress levels and protect against further development of burnout syndrome. Family resources such as a stable marriage or partnership may also be a protective factor against the build-up of stress and burnout in psychiatrists (mainly female). In addition, professional resources (work experience measured by number of years of work) is also important in explaining stress levels in psychiatrists. *Int J Occup Med Environ Health.* 2023;36(3):379–95

Key words:

psychiatrists, stress, workload, occupational burnout, non-professional-social factors, psychosocial predictors

INTRODUCTION

One of threats of modern civilization is stress related to the work environment [1]. Among the studies on stress and burnout in doctors, there is a diversity and ambiguity of relationships between experienced stress, professional burnout in doctors and demographic factors, such as age, gender, civil status [2–7], personality [8–15], experience and doctors' professional workload [13–19]. Among

the medical professions where employees are exposed to increased stress and burnout are nurses and doctors of various specialties: from specialists in interventional medicine to conservative medicine including psychiatrists [18]. Empirical studies, that look for the importance of psychosocial stress risk factors (including protective factors in reducing stress and burnout), in psychiatrists are scarce, due to the low availability of studies on this group

Funding: this work was supported by Faculty of Management and Social Communication, Jagiellonian University and Collegium Medicum Jagiellonian University.

Received: January 21, 2023. Accepted: June 21, 2023.

Corresponding author: Antoni Wontorczyk, Jagiellonian University, Institute of Applied Psychology, Faculty of Management and Social Communication, Łojasiewicza 4, 30-348 Kraków, Poland (e-mail: antoni.wontorczyk@uj.edu.pl).

of respondents. Therefore, the authors decided to look primarily for a group of social predictors, that are most often mentioned in the literature, to explain the level of occupational stress and burnout in psychiatrists [18–26]. Besides psychiatrists who work in Poland, it was decided to include, in the study group, psychiatrists who work in Ukraine and those who live and work in Poland. There were 2 reasons for this methodological procedure. In Poland, the number of medics undertaking this specialization is dramatically low (about 4000, including 400 children's psychiatrists) in comparison to other medical specializations. Moreover, psychiatrists, as a professional group, are hardly available for an empirical research. Secondly, the cultural, social and organizational working conditions of Polish and Ukrainian psychiatrists are comparable in terms of salaries, availability of psychiatric services, interest in undertaking this specialization, etc.

In previous studies, most often mentioned as potential factors for occupational stress and burnout in the medical profession group are personal factors (dispositional characteristics), interpersonal factors (family), and organizational risk factors (work structure and organization). Therefore, the research described here focuses on the explanatory variables, i.e., leadership functions (team management), workload factors (excessive number of working hours per week, also the number of schedules), professional resources (work experience), family resources (lasting affective relationships and family relationships), non-professional-social factors (use of vacations and pursued passions and interests outside of work).

The studies on psychosocial mechanisms of occupational stress alongside the theoretical model of Karasek [27] often take into account the concept of Hobfoll's resources recognized in health psychology [28], this concept emphasizes the importance of costs to be adapted to the social environment, including professional one. These costs are the individual resources one loses, that is, everything that man values, resources at one's own acceptable

level that one tries and fights to keep [27]. Referring this concept to the physician's work situation, it can be assumed that a working psychiatrist is exposed to stress, when the conditions of his daily work lead to the loss or reduction of his personal and environmental resources, or when the invested resources do not bring the expected profit. Studies of many authors have shown that there is a significant relationship between the sense of stress at work and the level of losses in relation to resources directly related to work (including job security, job satisfaction, good relationships at work), the image of oneself, the possibility of spending time attractively, insufficient sleep [18–19,27]. In the case of psychiatrists due to the specificity of the profession and constant contact with a person with mental disorders (from neurotic disorders, personality, psychotic patients or severe emotional crises, e.g., after suicide attempts) emotional exhaustion and disappointment with lack of self-efficacy is common.

Psychiatrist work is not always associated with success. It is often difficult to perform professional duties, in which it is necessary to engage own emotions in professional activities. Strong frustration in the psychiatrist's professional may be due to disease-conditioned claimability, excessive excitability, manic/depressiveness or aggression (including autoaggression) on the part of psychiatric patients, non-compliance with therapy related recommendations, which results from the structure of personality disorder and current life situation of the patients [8,29].

According to the literature and research on occupational burnout, many of the risk factors for development of stress and burnout result from daily burdens related to the structure of work, e.g., work time, amount of work and working conditions [6,30]. Dudek et al. [31] indicates among factors of occupational stress: a sense of mental burden related to the complexity of work, a sense of uncertainty caused by work organization, lack of rewards at work, lack of social contacts, physical nuisance

a sense of threat, unpleasant working conditions, lack of social support, lack of control and a sense of responsibility. According to Maslach's multidimensional theoretical model [32], professional burnout is "a psychological syndrome of emotional exhaustion, depersonalization and a reduced sense of personal achievement that may occur in people working with other people in a certain way" [32,33]. Occupational burnout is a response to stress directly related to work [8], constituting a continuum of symptoms – from full health to full burnout [34]. There is a relationship between the individual predispositions of an individual and the severity of individual symptoms of the syndrome. Occupational burnout is caused by the co-existence of adverse factors, depending on: employee (personality, way of functioning in the work environment) and employer, organization (culture, motivating system, work organization, management style, work under time pressure) [35,36]. In addition to the stress experienced in everyday life, it is worth paying attention to the professional experience accumulated in one's life (number of years in the profession of a psychiatrist, number of years of work in the basic workplace) and daily workload (number of work hours per week, number of rosters per month) as potential risk factors for the development of stress and burnout. On the one hand, stress in the situation of daily treatment of patients experiencing a variety of mental disorders improves job satisfaction, on the other hand, it exhausts and causes various health disorders [37]. Ogińska-Bulik's study [38] points out the correlation between the persistent stress at work and the health problems of people who experience this stress [37,38]. Ostrowski in his research [37] indicates that marriage is a salutogenic variable that reduces the number of mental problems in doctors. In conclusion, the results of the studies describing the relationship between stress and occupational burnout, as well as the relationship between stress and various psychosocial factors associated with medical personnel at work, are

inconclusive. Literature research finds various subjective determinants of job burnout in medical professions, especially in a group of nurses [39–44], physicians with surgical, palliative and other emergency, surgical and behavioral medicine specialties [18,19,44]. However, as mentioned in the introduction, there is a lack of empirical measure of the relationship between a group of psychosocial, socioeconomic and non-professional-social factors and the level of occupational stress and burnout experienced by psychiatrists.

MATERIAL AND METHODS

The paper investigates psychosocial predictors explaining the strength of experienced stress in psychiatrists and relationship between stress and exhaustion, lack of involvement in social and emotional relations, lack of professional effectiveness and mental disappointment in psychiatrists. All the psychosocial variables explaining the state of stress mentioned in own research model are factors describing the level of occupational burnout. The authors also sought the predictive role of workload (the number of daily work hours, rosters, managing roles), personal resources (professional experience, having interests and passions) and family resources (having a lasting marriage, partnership and functioning in the proactive family environment) on the severity of occupational stress in physicians.

The following research questions have been posed:

- Whether (and in what range) the intensity of experienced stress in the study group of psychiatrists can be explained by the level of emotional exhaustion, lack of commitment to relationships, lack of a sense of professional efficacy, and the increasing state of psychological disappointment, and the feeling of dissatisfaction with work. Could professional burnout factors be predictors of stress?
- Do (and to what extent) the level of workload (measured by the number of working hours per week,

the number of rosters per month, the frequency of taking a leave), explains the severity of experienced stress in the examined psychiatrists?

- Do (and to what extent) professional experience (number of years of work in the medical profession, number of years of work in the basic place of work) explain the strength of experienced stress in the examined psychiatrists?
- Do (and to what extent) personal resources defined as possessing and pursuing own interests in passion (hobby) and family resources defined as having permanent emotional relationships and personal life (family related to parental roles) explain the level of occupational stress in psychiatrists?

The perceived stress was identified as a main variable in the research model. This is a variable describing the level of stress experienced by a psychiatrist in their daily life and work situation. On the one hand, it is a variable explaining the level of severity of the factors of developing burnout, such as: exhaustion, involvement in the relationship with the patient, and the level of effectiveness and efficiency of performed professional tasks and satisfaction associated with the work performed. On the other hand, stress is the variable explained by variables: professional experience of psychiatrists (number of years of work in the profession, number of years of work in the basic place of work, managerial functions), workload related to the structure and organization of work (number of working hours per week, number of rosters per month, frequency of vacation use: single/multiple: 1–2 times a year, ≥ 3 times a year), personal resources (life interests and passions realized by the psychiatrists surveyed in everyday) and family resources (functioning in a lasting marital or partner relationship with the performance of family roles related to raising children).

In the research model, a variable called burnout was distinguished. This variable was defined as a set of various emotions and mental states related to professional

work, and called: the state of exhaustion, commitment to the relationship with the patient, and the level of effectiveness and efficiency of the professional tasks performed and the satisfaction accompanying the work performed. The second variable explaining the level of perceived stress was defined as the workload (i.e., the exposition of behaviours within the scope of current occupational activity measured by the number of working hours per week, the number of rosters per month, the frequency of taking leave during the year). The third explanatory variable was called professional experience, and was verified by measuring the number of years of work as a physician, number of years of work in the basic workplace). The fourth explanatory variable were personal resources and was defined as having and pursuing passions in everyday life (hobby). The fifth explanatory variable was called family resources and was defined as the state of having permanent marriage or partnership with the implementation of parental roles (bringing up children) by psychiatrists. The age the examined psychiatrists was also variable (from the time of the young adult, i.e., the time of graduation to the period of late adulthood).

Material

The research was conducted between 2019–2021 in Poland in the Małopolska, Podkarpackie and Lubelskie regions and in Ukraine. The selection for the group of respondents was purposeful. The study enrolled 131 doctors – the specialists in the field of psychiatry (57 Polish working in Poland and 74 Ukrainians working in Ukraine): 96 women (73%) and 35 men (27%), aged 27–86 years ($M \pm SD$ 47 ± 12.23 years). In the study group 11 (14%) people had a scientific degree, of which: 8 PhD in medical sciences or during the procedure to conferring the above-mentioned academic degree, and 3 MDs had a postdoctoral or professor degree.

The exclusion criteria were: lack of specialization in psychiatry, citizenship and nationality other than Polish.

The response questionnaires, that included missing items, were excluded from further data analysis. Socioeconomic characteristics of the group of examined psychiatrists: 91% people provided public health services, and 9% people in non-public health care units (as part of commercial services); 18% people had employment in 1 place, 35% people – in 2 places, 26% people – in 3 places, 12% people – in 4 places, 3% people – in 5 places, and 5% people – in >5 places.

Over the last 5 years 26% people have changed their place of employment once, 10% people – twice, 3% people – 3 times, and 5% people – ≥ 5 times. Twenty-two percent physicians participating in the study served as a manager (the head of the psychiatric ward or mental health clinic). Three percent psychiatrists used to work abroad to perform the profession of a psychiatrist.

Method

The original questionnaire was used to measure the variable:

- professional experience and workload containing a set of questions about socio-economic data (medical specializations, academic titles, current number of parallel jobs, number of years of work in the basic place of work, frequency of job changes in current life, episodes of undertaking work abroad, performing the function of the manager);
- questions about demographic data (sex, age, marital status: single/widower, widow, free relationship, marriage);
- questions about data on health behaviours in the scope of current professional activity (measurement of professional workload – number of rosters in the month, frequency of taking leave during the year, taking antidepressants).

The surveyed physicians were also questioned about their non-professional activity (frequency of undertaking activities related to the implementation of interests and

passions in everyday life, having an account on a social network, having a pet). The variable of professional burnout was measured with *Link Burnout Questionnaire* (LBQ) and the *Perceived Stress Scale* (PSS-10) was used to measure the variable describing the current stress level. The LBQ questionnaire is the 24-element tool developed by Santinello [45] and adapted by Jaworowska [46]. The examined person uses a 6-point scale to assess feelings related to their professional work.

Estimated LBQ internal compliance for Polish doctors is sufficient for making psychometric measurements of occupational burnout factors – Cronbach's α :

- psychophysical exhaustion – 0.74,
- disappointment – 0.78,
- lack of involvement – 0.62,
- a sense of professional ineffectiveness – 0.60 [46].

The PSS-10 developed by Cohen, Kamarck and Mermelstein [47] (Polish study by Juczyński, Bulik [48]) was used to measure the variable describing the level of stress experienced by the examined psychiatrists. The questionnaire consists of 10 questions. It is used to assess the intensity of stress associated with one's own life situation over the past month and relates to subjective feelings related to personal problems and events, behaviours and ways of dealing with them. The respondent typed in the following numbers: 0 – never, 1 – almost never, 2 – sometimes, 3 – quite often, 4 – very often. Indicators of reliability and statistical accuracy of PSS-10 are satisfactory (Cronbach's α – 0.86).

RESULTS

The results of the study were subjected to statistical analysis using the Statistica 8 software and SPSS PC v. 19.0 PL. The description uses numerical, percent and mean numbers and standard deviations. In all calculations, the significance was assumed coefficient at the level of $p < 0.05$ as the criterion of statistical significance. In the first stage of description of the test results, descriptive char-

Table 1. Descriptive statistics and results of normality analyses for the distribution of the *Link Burnout Questionnaire* (LBQ) and *Perceived Stress Scale* (PSS-10) subscales in a group of psychiatrists (N = 131), 2019–2021, Poland and Ukraine

Variable	Min.	Max	M	SD	Me	Skewness	Kurtosis	Z-test	p
Level of burnout (LBQ)									
psychophysical exhaustion	6	33	20.46	6.50	21	−0.13	−0.50	0.06	0.20
lack of commitment in relationships with patients	6	26	17.32	4.44	18	−0.21	−0.30	0.10	0.19
lack of professional efficacy	6	34	17.05	5.85	17	0.34	0.19	0.07	0.20
disappointment	6	33	16.40	6.12	16	0.25	−0.14	0.07	0.20
Level of perceived stress (PSS-10)									
level of perceived stress	2	37	22.3	8.34	22.0	−0.16	−0.86	0.09	0.20

acteristics of the group of respondents in terms of mean and standard deviations in the intensity of all research variables were made. In the second stage of statistical analyses, a stepwise regression model was carried out in order to separate the group of predictors that significantly explained the variables verified in the research model. The characteristics of mean values for the severity of occupational burnout (as measured by the LBQ questionnaire) and the average value for the level of experienced stress in the examined psychiatrists are presented in Table 1.

In the analysis of the results of the LBQ and PSS-10 questionnaires, descriptive statistics were used, defining the average severity of 4 factors of occupational burnout and the level of stress experienced in the examined psychiatrists. The conformity analysis of the distribution of results with the normal distribution for the study group (N = 131) was made. The analysis of the normality of the distribution was carried out using the Kolmogorov-Smirnov test with the Lilliefors amendment (Table 1). On the LBQ scale, the average results of the psychiatrists were in all subscales in the range of above-average results, which indicates abnormal intensity of all variables describing the features of burnout (psychophysical exhaustion, lack of involvement in relationships, feelings of professional inactivity and feelings of disappointment) in the psychiatrists. Similarly, the average level

of stress experienced by the examined doctors was also in the range of abnormal results (above average), which suggests the functioning of the subjects at the time of the study in the state of felt high emotional distress. It is worth noting that among the surveyed dominated women >40 years old (M = 47 years), which would suggest that it was mainly women psychiatrists that revealed an increased level of occupational burnout and experienced stress. In order to characterize the frequency of ascension of other variables – as in case of stress level and occupational burnout factors – the average occupational load was measured (i.e., current professional activity measured by the number of working hours per week, the number of rosters a month, the frequency of taking leave during the year), professional experience (number of years of work in the medical profession, number of years of work in the basic place of work, management functions), personal resources (having and pursuing interests and passions), family resources (functioning in permanent marriages or partnerships with performing parental roles). The above data are presented in Table 2.

The average values presented in Table 2 indicate that women dominate in the examined psychiatrists (as described in the characteristics of a group of respondents). They were aged approx. 47 years, had >21 years of experience as a psychiatrist and >55 working h/week

Table 2. Values for variables: professional experience, occupational load and presentation of the percentage distribution of the number of personal and family resources of the surveyed psychiatrists (N = 131), 2019–2021, Poland and Ukraine

Variable	M	SD	Min.	Max
Professional experience [years]				
work as a doctor	21.50	13.25	1	56
work in the basic work place	14.04	12.19	1	37
Occupational burden				
working time [h/week]	55.46	17.99	28	96
rosters [n/month]	3.11	3.21	0	12
Frequency of having holiday [%]				
<once a year	7		5.26	
once a year	60		45.61	
twice a year	44		33.33	
≥3 times a year	20		15.78	
Personal resources (hobby – having and pursuing interests and passions) [%]				
declaration of having and pursuing passion and interests (hobby) in everyday life	101		77.19	
lack of declaration of having and pursuing passion and interests in everyday life	30		22.80	
performed managerial functions	30		22.80	
lack of managerial functions	101		77.19	
Family resources [%]				
functioning in a permanent marital or partner relationship and the implementation of parental roles	107		82.45	
no permanent relationship in one's life (declaration of being single) without parental roles	24		17.54	

with an average of 3 rosters/month. The vast majority of them took leave 1–2 times/year (about 79% of all respondents), declared having and pursuing own passions and interests in their daily lives (>77% of all respondents). The vast majority of respondent psychiatrists were having permanent marriages or partnerships, in which they are currently or carried out parental roles also in the past (>82% of all respondents). Descriptive characteristics of the research variables allowed to assess the level of intensity of all research variables and gave the basis for the next stage of statistical analysis in the direction of measuring the strength of the relationship between variables. It was necessary to answer the research questions. Therefore, in the second statistical stage, a stepwise regression analysis was performed.

Factors in the development of occupational burnout and perceived stress

Initially, a stepwise regression analysis for each of the burnout indicators was conducted to statistically measure the predictive power of stress experienced by psychiatrists on the features of occupational burnout. Variables describing the configuration of occupational burnout were introduced successively to the regression model: 1) exhaustion 2) lack of engagement in relationships 3) lack of a sense of professional effectiveness 4) disappointment. Significant regression models are shown in Table 3 and 4.

The model with exhaustion as the only predictor was well suited to the data, $F(1, 316) = 291, 354, p < 0.001$ and allowed prediction of the level of perceived stress

Table 3. Summary of models including successive predictors for the dependent variable of the level of perceived stress (explanatory variable – burnout) in surveyed psychiatrists (N = 131), 2019–2021, Poland and Ukraine

Predictor	R ²		p
	adjusted	change	
1. Psychophysical exhaustion	0.48	0.48	<0.001
2. Lack of engagement in relationships	0.48	0.00	0.78
3. Lack of a sense of professional effectiveness	0.56	0.08	<0.001
4. Disappointment	0.56	0.00	0.94

in 48% (corrected $R^2 = 0.478$). The addition of another variable to this model, the lack of involvement in the relationship, did not change its predictive value (R^2 change irrelevant, $p = 0.78$). In the case of a model that took into account 3 predictors (exhaustion, lack of engagement in relationships, lack of a sense of professional effectiveness), the predictive value increased to 56% (a significant change in R^2 , $p < 0.001$). A closer look at the composite model showed, however, that only 2 variables were associated with the level of experienced stress: exhaustion ($\beta = 0.48$, $p < 0.001$) and lack of a sense of professional effectiveness ($\beta = 0.38$, $p < 0.001$). Lack of involvement in the relationship did not show any relation to the level of stress ($\beta = -0.08$, $p = 0.07$). Adding fourth predictor to the model – disappointment did not change the predictive value of the model (change R^2 is irrelevant, $p = 0.94$). The summary of the results of regression analysis showed that in the analyzed models, the predictors for the level of experienced stress were exhaustion and lack of sense of professional effectiveness. The dependence between exhaustion and lack of the sense of professional effectiveness had a positive value, which meant that the higher the level of psychophysical exhaustion and lack of a sense of professional effectiveness (the effectiveness of the tasks performed), the higher the level of stress experienced by the psychiatrists tested, and vice versa. Thus, disappointment and lack of involvement in relationships in the subjects did not show significant relation with the level of stress experienced by psychiatrists only for the develop-

ment of psychophysical exhaustion and a sense of inefficiency in professional activities.

Whereas disappointment (lack of passion, enthusiasm accompanying the performed professional work) and lack of involvement in the relations of the subjects with patients (from commitment to indifference and distancing in professional relationships) were factors that contribute to occupational burnout, which did not show a significant relationship with the level of stress experienced by doctors.

Professional experience and workload as well as personal and family resources and the level of stress experienced by the examined psychiatrists

To clarify the answers to research questions also the strength of dependencies between variables was measured: professional experience and workload, personal resources (interests and passions) and family (permanent marriages and partnerships), and the stress level experienced by the examined doctors in everyday life. The only model significantly matched to the data was a model with 1 predictor: the number of years of work in the medical profession, $F(1, 316) = 5,68$, $p = 0.02$, which allowed to predict the level of perceived stress in 2% (corrected $R^2 = 0.02$). Adding predictors to this model did not change the predictive value of the models (non-significant changes of R^2). Other variables had not been significantly associated with the perceived stress of the subjects (Table 4 and 5). The low percentage of variance explaining perceived stress

Table 4. Summary of the strength of relations between predictor and stress in selected regression models for occupational burnout factors and occupational load (number of working hours per week and number of rosters a month) in surveyed psychiatrists (N = 131), 2019–2021, Poland and Ukraine

Predictor	β	t	p
Occupational burnout factor			
1			
psychophysical exhaustion	0.69	17.07	<0.001
2			
psychophysical exhaustion	0.70	14.32	<0.001
lack of engagement in relationships	-0.01	-0.28	0.78
3			
psychophysical exhaustion	0.48	9.18	<0.001
lack of engagement in relationships	-0.08	-1.81	0.07
lack of a sense of professional effectiveness	0.39	7.76	<0.001
4			
psychophysical exhaustion	0.49	8.28	<0.001
lack of engagement in relationships	-0.08	-1.81	0.09
lack of a sense of professional effectiveness	0.39	7.30	<0.001
disappointment	-0.001	-0.08	0.94
Occupational load			
1			
number of years of work as a doctor	-0.13	-2.38	0.02
2			
number of years of work as a doctor	-0.10	-1.24	0.22
number of years of work in the basic work place	-0.04	-0.49	0.62
3			
number of years of work as a doctor	-0.09	-1.04	0.30
number of years of work in the basic work place	-0.04	-0.51	0.61
number of working hours per week	0.05	0.80	0.42
4			
number of years of work as a doctor	-0.09	-1.04	0.30
number of years of work in the basic work place	-0.04	-0.05	0.62
number of working hours per week	0.05	0.64	0.52
number of rosters in a month	-0.01	-0.05	0.96
5			
number of years of work as a doctor	0.03	0.24	0.81
number of years of work in the basic work place	-0.02	-0.18	0.85
number of working hours per week	0.04	0.49	0.62
number of rosters in a month	-0.01	-0.01	0.99
age	-0.16	-1.24	0.22
6			
number of years of work as a doctor	0.03	0.24	0.81
number of years of work in the basic work place	-0.02	-0.18	0.85
number of working hours per week	0.04	0.49	0.62
number of rosters in a month	-0.01	-0.01	0.99
age	-0.16	-1.24	0.22
employees salary	-0.21	-3.78	0.04

Table 5. Summary of the strength of predictors' relationships and perceived stress in selected regression models for the variable: professional experience in surveyed psychiatrists (N = 131), 2019–2021, Poland and Ukraine

Predictor	R ²		p
	adjusted	change	
1. Number of years of work as a doctor	0.02	0.02	0.02
2. Number of years of work in the basic work place	0.01	0.00	0.62
3. Number of working hours per week	0.01	0.00	0.42
4. Number of rosters in a month	0.01	0.00	0.96
5. Age of the subjects	0.01	0.00	0.22
6. Employees salary	0.07	0.07	0.07

by occupational load as well as the lack of association with the other variables (work experience) led to the decision to include the variable earnings in the model in the next step. In the questionnaire, respondents estimated them as low, average or high. The addition of this variable significantly improved the size of the estimated effects (adjusted $R^2 = 0.07$). In addition, this variable is a buffer for perceived stress. The higher the earnings, in this group of doctors, the lower the stress experienced.

Summing up, the results of regression analysis contained in Tables 4 and 5 show that only the number of years of work in the medical profession (an element of professional experience) turned out to be a significant predictor of the level of experienced stress in the examined psychiatrists. The dependence between the variables has a negative direction, which means that the more years of work in the profession of a psychiatrist, the lower the stress level. Indicators defining the workload (number of working hours per week and number of rosters in the month) proved to be irrelevant in explaining the stress level in the examined psychiatrists.

In the next step of statistical analyses, the relationship between the level of experienced stress and being the team leader, marital status (having permanent formal and informal relationships and parental roles in them, having and pursuing interests and passions in everyday life, frequency of taking a leave) were checked.

Qualitative variables included in regression models were encoded in the dichotomous variables. Interestingly, the result of regression analysis indicating that being the head of the team was a significant predictor of experienced stress, $F(1, 316) = 4.32$, $p = 0.04$, and allowed to predict the variability of the dependent variable in 1% (corrected $R^2 = 0.01$). The relationship between these variables was weak, $\beta = -0.12$, $p = 0.04$. Higher stress levels were experienced by doctors who serve as team leaders than doctors who were not team leaders. The research also sought the strength of the relationship between the passions and interests possessed and pursued in the life of the respondents and the stress experienced by them. It turned out that hobby was an important but poor predictor of the experienced stress in the examined psychiatrists, $F(1, 315) = 18.70$, $p < 0.001$, and allowed prediction of a dependent variable change in 5% (corrected $R^2 = 0.05$). The direction of the relationship was negative ($\beta = -0.24$, $p < 0.001$). Those who did not have a hobby experience a higher level of stress than people with passion. Regarding the marital status of the respondents, being in a free (partnership) relationship was significant and the only analyzed predictor of felt stress, $F(4, 313) = 2.33$, $p = 0.05$ ($\beta = -0.11$, $p = 0.05$). This variable allowed to predict a change in the dependent variable in 2% (adjusted $R^2 = 0.02$). The average level of stress of people in a free (partnership) relationship was lower than singles. Being

in the first ($\beta = -0.07$, $p = 0.21$), the second ($\beta = -0.08$, $p = 0.16$), and the third marriage ($\beta = 0.09$, $p = 0.11$), was not significantly related to the level of stress experienced by psychiatrists. Regression analysis also indicated that the use of leave was an important predictor of the experienced stress, $F(3, 314) = 14.60$, $p < 0.001$ and allowed predicting a change in the dependent variable in 11% (adjusted $R^2 = 0.11$). An important predictor of the experienced stress was only the variable that determines the multiple use of holidays in the year (≥ 3 times/year) ($\beta = -0.27$, $p < 0.001$). The average stress level of people using leave in this way was lower than those who take leave less frequently than once a year. Using the leave once a year ($\beta = 0.11$, $p = 0.18$) and twice a year ($\beta = -0.14$, $p = 0.09$) were not significantly related to the level of stress.

DISCUSSION

The results of this study confirmed the presence of intensified (above average) level of all 4 factors of occupational burnout (psychophysical exhaustion, lack of a sense of professional effectiveness and then lack of involvement in social relations, feelings of disappointment) in the group of psychiatrists and stress experienced by the respondents in current life. The authors of the study cited in this article have measured 2 separate variables (occupational burnout and stress) with separate psychological questionnaires and a clinical method (author's questionnaire measuring socioeconomic indicators of occupational stress) only in the group of psychiatrists.

Studies by other authors describe similar results in terms of psychophysical (emotional) exhaustion, lack of a sense of professional effectiveness, confirming high intensity of occupational burnout in contemporary psychiatrists [49–52] and doctors of various medical specialties [4,18,53–60]. However, the authors of many studies apart from the fact that they study different groups of doctors, they measure stress and burnout with various tools (from questionnaires, where information is gathered from respondents to psychological

questionnaires sometimes composed of only a few items) or they only describe occupational burnout without measuring the currently experienced stress from non-business life, which may affect the differences in the interpretation of the results of the study obtained by different authors and compare them with the results of the study of the authors of this article. However, many researchers have measured occupational burnout in a group of psychiatrists and confirmed the results of their research with a high incidence of burnout in psychiatrists (exhaustion, lack of professional effectiveness) and constant stress experienced by psychiatrists and other psychiatric staff [10,11,13,18,61–62]. According to some studies, high incidence of burnout traits is typical also for doctors in many other specialties, such as anesthesiologists and intensive care physicians – and is higher in women and young doctors [55,63].

It is worth noting that in this study dominated women with an average age of 47 years. So they were mature women in the so-called middle-aged adulthood, performing the profession of a psychiatrist at the same time having permanent relationships and raising children. This question arises as to how much the age of the women interviewed may contribute to increased levels of job burnout and affect the level of stress experienced, which is related to the specificity of the initial life balance that may occur in respondents aged 47 years and their life experiences. The results of this study may finally be characteristic only for a selected group of women in the psychiatry. The results of the study showed an increased level of psychophysical exhaustion and a felt lack of a sense of professional effectiveness in the psychiatrists examined. These 2 variables turned out to be a significant predictor of the level of stress experienced by the psychiatrists examined, indicating that the greater the psychophysical exhaustion and the lack of a sense of professional effectiveness, the greater the severity and the development of stress in professionally active psychiatrists.

Similar predictors of perceived stress for psychiatrists are highlighted by Fothergill et al. [4] and other research-

ers [49–51,54,64]. Maslach and Leiter [56] indicate that psychophysical exhaustion (including emotional) as a predictor of experienced stress also in doctors can be associated with many loads, i.e., responsibility for the life of the patient in the case of suicidal thoughts and actions, autoaggressive behaviours, unpredictable behaviour of people with mental disorders, the need for constant observation or use of direct coercion or the necessity to participate in family matters of the patients. The results obtained in this research can also be viewed from the perspective of professionalism at work and motivation to gradually improve professional qualifications. It is worth pointing out that emotional exhaustion and a reduced sense of professional effectiveness may lead to committing medical errors and a sense of lack of professionalism as observed in other studies [65] as well as a decrease in the willingness to develop their qualifications. These factors may ultimately negatively affect the quality of work of medical staff, not necessarily resulting from their intentional actions, but as a consequence of the psychological state of psychiatrists. The results of this study also indicated the existence of a second significant negative relationship between the psychiatrist's professional experience (seniority, i.e., the number of years of work as a psychiatrist) and the level of stress experienced by him. This dependence means that the greater the number of years of work, the lower the severity of stress in the examined psychiatrist. Similar results were obtained by Nimmawitt et al. [66], when surveying psychiatrists in Thailand. Different results were obtained by Chinese researchers, who detected such relationship only in psychiatrists with a practice of 11–20 years [51]. Very similar to results of this study were also obtained in American studies where occupational burnout was compared in various medical specialties and it turned out that occupational burnout decreases in internists with age and seniority [51,54,67]. Interestingly, the importance of seniority (professional experience as a psychiatrist) in better coping with the stress in the daily life of a psychiatrist was found

compared to the next result, which indicates that the workload (measured by the number of working hours per week) and the number of rosters in the month) measured with the indicators turned out to be irrelevant in explaining the stress level of the psychiatrists examined. This result differs from the results of some other researchers. Yao et al. [51] showed that psychiatrists working >50 h/week in China experience more stress and burnout than psychiatrists who work only for 40 h/week. Some studies point out that workload is a frequently mentioned predictor of burnout and occupational stress [59–67]. Hoffman and Scott [59] and Duquette et al. [60] indicate that the burden on the irregularity of the physician's working time, lack of sense of efficiency and job satisfaction are predictors of occupational burnout in primary care physicians. It should be noted that many researchers refer to the measurement of occupational burnout and not the experienced stress in terms of the demonstrated relationship between the level of occupational burnout and the burden of the system of doctor's work and low level of job satisfaction [20,68–69]. The authors have focused not so much on occupational burnout as on psychiatrists who are experiencing chronic stress because of workload and search for psychosocial risk factors and also protective factors that would support health prevention and care for mental hygiene to develop constructive strategies for dealing with such an inevitable stress of the everyday life of a psychiatrist. The difference in the results of the authors' and Hoffmann's and Scott's research [59] in the scope of the unrelated dependence between the number of years of work and the related occupational burden may result from many reasons, e.g., due to the specificity of the research group: psychiatry specialists with many years of experience and professional experience have been researched to deal with a variety of stressful situations, the frustration of emotional and social needs). Secondly, in this study and other authors', usually the models of the analyzed variables and tools for their measurement are slightly different, but they are mostly focused

on the measurement of occupational burnout and not on the parallel measurement of experienced stress and burnout in psychiatrists. Thirdly, maybe the results of this research are specific only to the group of psychiatrists surveyed: middle-aged women with rich professional experience, for whom the number of hours of work, rosters is not a predictor of stress, because the vast majority of the subjects (as the study shows) had personal resources (pursued their own interests), regularly enjoyed their leave and had family resources, i.e., they had permanent marriages or partnerships, in which they were also in parental roles. This is explained by the next results that personal resources such as: having and pursuing own non-business interests and passions (hobby) and having a lasting marital or partner relationship related to the implementation of family and educational roles, are positive predictors of perceived stress in psychiatrists (in the majority of women).

In this study, there was a significant and positive strength of relation between passions and interests, partnerships (free and marital) and experienced stress in psychiatrists. The average level of stress of people in a free (partner, permanent, at least 1-year long) relationship is lower than singles. Similar results were obtained by Yao et al. [51], when surveying psychiatrists in China. In contrast, in Thai psychiatrists, similar relationships were not found [66]. Finally, it should also be emphasized that in the sample of this research dominated middle-aged women in permanent relationships and having children, which may also indicate a balance between private life and work, and thus a better quality of life in the psychological dimension. The results in line with this study were also indicated by Frank et al. [67] although they only examined gynecologists.

Ostrowski [37] obtained similar results in his research conducted in the group of doctors (non-psychiatrists) pointing to marriage as a salutogenic variable reducing the number of psychological problems in doctors. Workload can be analyzed in the category of quantitative overload (high number of hours of work and/or patients and a multitude of duties) or

qualitative (problem with maintaining the balance between professional activity and private life) [21]. No correlation between age and the level of stress experienced by psychiatrists was observed. However, in the literature, research indicating the dependence or independence between occupational burnout and age [5,15,22,23,67,68] are more common. Similarly, the research of Canadian doctors in the course of specialization in psychiatry indicate that that 21% of them have symptoms of occupational burnout, but there is no correlation between occupational burnout and age, gender and place of work [69]. The above-mentioned studies of many authors concern, as already mentioned, the measurement of the strength of dependence between various psychosocial variables and occupational burnout. They do not refer directly to the measurement of stress predictors experienced by psychiatrists, which should be controlled and reduced by the acquisition of constructive strategies to cope with a frustrating stress situation in professional experience so that burnout does not take place.

CONCLUSIONS

Significant predictors of increased stress in the examined psychiatrists proved to be the state of exhaustion and lack of a sense of professional effectiveness (the higher the level of psychophysical exhaustion and lack of a sense of professional effectiveness, the higher the level of stress experienced by the psychiatrists examined). Moreover, the significant predictors of the stress experienced by psychiatrists were: professional experience (seniority in the profession of a psychiatrist) and possessed personal resources, such as: having and pursuing one's interests, maintaining proper proportions between personal life (taking advantage of holidays, hobbies) and professional life. An important predictor of the level of stress experienced by physicians and coping with it turned out to be the family resource described as having and functioning in stable relationships (marriage and partnership). Coping with stress is an individualized process, it also applies to psychiatrists, who due

to their profession and the burdens stemming out of it usually work out and deal with it in habitually developed way of reacting in stressful situations. It is worth indicating that they can benefit from broadly understood psychosocial support to prevent occupational burnout.

Limitation

The research presented in this article has some limitations. Due to the comparatively small study group, the obtained results should be referred mainly to the female group of psychiatrists. Although, the study group, (small in the research reported here) meets the general proportions of psychiatrists, due to the gender variable, but several studies have found that psychiatrists experience more severe stress and burnout than, physicians with the other specializations, or the other health care employees [24–26]. A similar issue applies to the lack of association between stress and burnout and the age of the respondents. The results obtained in the authors' own study are consistent with many other studies, however the large differences in the number of subjects in the given age groups indicated, caution in estimating results for other contexts. Psychiatrists are an important professional group that can contribute to the increasing knowledge about stress and burnout. Identifying disability status due to burnout, requires a precise and objective assessment. Burnout research for this difficult to access group should be a highly prioritized part of the profession.

ACKNOWLEDGMENTS

The authors thank the authorities of the Faculty of Management and Social Communication of the Jagiellonian University for funding the publication of the article.

Author contributions

Research concept: Bernadetta Izydorczyk,
Marta Makara-Studzińska

Research methodology: Antoni Wontorczyk,
Bernadetta Izydorczyk

Collecting material: Antoni Wontorczyk,
Marta Makara-Studzińska

Interpretation of results: Antoni Wontorczyk,
Bernadetta Izydorczyk

References: Antoni Wontorczyk

REFERENCES

1. Rybakiewicz J. Człowiek i psychologia. Bielsko-Biała: Wydawnictwo Park; 2005.
2. Juczyński Z, Ogińska-Bulik N. Narzędzia pomiaru stresu i radzenia sobie ze stresem. Warszawa: Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego; 2009.
3. Gazelle G, Liebschutz J, Riess H. Physician Burnout: Coaching a Way Out. *J Gen Intern Med.* 2015;30(4):508–513, <https://doi.org/10.1007/s11606-014-3144-y>.
4. Fothergill A, Edwards D, Burnard P. Stress, Burnout, Coping and Stress Management in Psychiatrists: Findings from a Systematic Review. *Int J Soc Psychiatry.* 2004;50(1):54-65, <https://doi.org/10.1177/0020764004040953>.
5. Shanafelt T, Boone S, Tan L, Dyrbye L, Sotile W, Satele D, et al. Burnout and Satisfaction With Work-Life Balance Among US Physicians Relative to the General US Population. *Arch Intern Med.* 2012;172(18):1337-1385, <https://doi.org/10.1001/archinternmed.2012.3199>.
6. Ogińska-Bulik N. Stres zawodowy w zawodach usług medycznych. Źródła-konsekwencje-zapobieganie. Warszawa: Wydawnictwo Difin; 2006.
7. Renzi C, Di Pietro C, Tabolli S. Psychiatric morbidity and emotional exhaustion among hospital physicians and nurses: association with perceived job-related factors. *Arch Environ Occup Health.* 2012;67(2):117-23, <https://doi.org/10.1080/19338244.2011.578682>.
8. Bańkowska A. Occupational burnout syndrome – symptoms and risk. *Pielęgniarstwo Polskie.* 2016;2(60):256-260, <http://doi.org/10.20883/pielpol.2016.20>. Polish.
9. Meder J. Zachowania agresywne, przeciwdziałanie, leczenie. Kraków: Polskie Towarzystwo Psychiatryczne; 2007.

10. Anczewska M. Stres i wypalenie zawodowe u pracowników psychiatrycznej opieki zdrowotnej. Warszawa: Wydawnictwo IPIŃ; 2006.
11. Rejek E, Szmigiel M. Stress of medical personnel related to specific work in the psychiatric ward. *Nursing Topics*. 2015;23(4):515–519, <https://doi.org/10.5603/PP.2015.0084>.
12. Tsirigotis K, Gruszczyński W, Tokarska I. [Neurotic disorders of nurses in psychiatric hospital wards]. *Probl Piel* 2010;18(4):461–468. Polish.
13. Maslach Ch, Leiter M. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*. 2016;15(2):103–111, <https://doi.org/10.1002/wps.20311>.
14. Meeusen V, Van Dam K, Brown-Mahoney C, Van Zendert A, Knapa H. Burnout, psychosomatic symptoms and job satisfaction among Dutch anaesthetists: a survey. *Acta Anaesthesiol Scand*. 2010;54:616–621, <https://doi.org/10.1111/j.1399-6576.2010.02213.x>.
15. Shirom A, Nirel N, Vinokur AD. Work hours and caseload as predictors of physician burnout: the mediating effects by perceived workload and by autonomy. *Appl Psychol*. 2010;59:539–565, <https://doi.org/10.1111/j.1464-0597.2009.00411.x>.
16. Shanafelt T, Boone S, Tan L, Dyrbye L, Sotile W, Satele D, et al. Burnout and Satisfaction With Work-Life Balance Among US Physicians Relative to the General US Population. *Arch Intern Med*. 2012;172(18):1337–1385, <https://doi.org/10.1001/archinternmed.2012.3199>.
17. Kumar S. Burnout and psychiatrists: what do we know and where to from here? *Epidemiol Psychiatr Sci*. 2011 Dec;20(4):295–301.
18. Solecki L, Klepacka P. The causes and factors contributing to the occurrence of professional burnout syndrome among physicians employed in public health care sector. *Environmental Medicine*. 2017;20(1):7–16, <https://doi.org/10.19243/2017101>.
19. Joško J, Kasperczyk J, Gościńiewicz P, Borczykowski J, Juszczuk J, Klimasara J, et al. [Stress doctors do not miss it]. *Probl Hig Epidemiol*. 2006;87(3):198–200. Polish.
20. Kamaloo A, Ahmadipour A, Labbaf A, Hesari E, Valadkhani S, Zebardast J, Arbabi M. Why Do Emergency Medicine Residents Experience Burn Out? A qualitative study. *Iran J Psychiatry*. 2017;12(3):214–218.
21. Bruce SM, Conaglen HM, Conaglen JV. Burnout in physicians: a case for peer-support. *Intern Med J*. 2005;35:272–278, <https://doi.org/10.1111/j.1445-5994.2005.00782.x>.
22. Ersoy-Kart M. Relations among social support burnout and experiences of anger: an investigation among emergency nurses. *Nurs Forum*. 2009;45:165–174, <https://doi.org/10.1111/j.1744-6198.2009.00139.x>.
23. Scarella T, Nelligan J, Roberts J, Boland RJ. Effect of call organization on burnout and quality of life in psychiatry residents. *Asian Journal of Psychiatry*. 2017;25:27–30, <https://doi.org/10.1016/j.ajp.2016.10.016>.
24. Dennis NM, Swartz MS. Emergency psychiatry experience, resident burnout, and future plans to treat publicly funded patients. *Psychiatr Serv*. 2015;66:892–5.
25. Vičentić S, Jovanović A, Dunjić B, et al. Professional stress in general practitioners and psychiatrists: the level of psychologic distress and burnout risk. *Vojnosanitetski Pregled*. 2010;67:741–6.
26. Kumar S, Sinha P, Dutu G. Being satisfied at work does affect burnout among psychiatrists: a national follow-up study from New Zealand. *Int J Soc Psychiatry*. 2013;59:460–7.
27. Karasek RA, Theorell T, Schwartz JE, Schnall PL, Pieper CF, Michela JL. Job characteristics in relation to the prevalence of myocardial infarction in the US Health Examination Survey (HES) and the Health and Nutrition Examination Survey (HANES). *Am J Public Health*. 1988;78(8):910–918.
28. Hobfoll SE. Stres, kultura i społeczność. *Psychologia i filozofia stresu*. Sopot: Gdańskie Wydawnictwo Psychologiczne; 2006.
29. Stangierska I, Horst-Sikorska W. Ogólne zasady komunikacji między pacjentem a lekarzem. *Forum Medycyny Rodzinnej*. 2007;1(1):58–68.
30. Freudemberger H. Staff burnout. *J Soc Issues*. 1974;30(1):159–65. <http://doi.org/10.1111/j.1540-4560.1974.tb00706.x>.

31. Dudek B, Waszkowska M, Merecz D, Hanke W. Ochrona zdrowia pracowników przed skutkami stresu zawodowego. Łódź: Oficyna Wydawnicza Instytutu Medycyny; 2004.
32. Maslach C.W perspektywie wielowymiarowej. In: Sęk H editor, Wypalenie zawodowe. Przyczyny i zapobieganie. Warszawa: Wydawnictwo Naukowe PWN; 2007. p. 13–31.
33. Sęk H. Wypalenie zawodowe. Przyczyny, mechanizmy, zapobieganie. Warszawa: Wydawnictwo Naukowe PWN; 2000.
34. Janczewska E, Sierdziński J. [Comparative evaluation of most commonly used methods and statistical techniques in scientific publications on professional burnout syndrome amongst health care employees]. *Hygeia Public Health*. 2014;49(4):759-764. Polish.
35. Bartkowiak G. Psychologia zarządzania. Poznań: Wyd. AE; 1999.
36. Kuc B, Moczyłowska J. Zachowania organizacyjne. Warszawa: Difin; 2009.
37. Ostrowski MT. [Positive and negative consequences of having more than one job for doctors' health]. *Pol Forum Psychol*. 2009;14(1):78-89. Polish.
38. Ogińska-Bulik N. Stres zawodowy w zawodach usług społecznych. Warszawa: Difin; 2006.
39. Lin F, St John W, McVeigh C. Burnout among hospital nurses in China. *J Nurs Manag*. 2009;17:294-301, <http://doi.org/10.1111/j.1365-2834.2008.00914.x>.
40. Greenglass ER, Burke RJ, Fiksenbaum L. Workload and burnout in nurses. *J Community. Appl Soc Psychol*. 2001; 11:211-215, <https://doi.org/10.1002/casp.614>.
41. Sasaki M, Kitaoka-Higashiguchi K, Morikawa Y, Nakagawa H. Relationship between stress coping and burnout in Japanese hospital nurses. *J Nurs Manag*. 2009;17:359-365, <https://doi.org/10.1111/j.1365-2834.2008.00960.x>.
42. Hsu HY, Chen S-H, Yu H-Y, Lou JH. Job stress, achievement motivation and occupational burnout among male nurses. *J Adv Nurs*. 2010;66:1592-1601, <https://doi.org/10.1111/j.1365-2648.2010.05323.x>.
43. Tunc T, Kutanis RO. Role conflict, role ambiguity and burnout in nurses and physicians of university hospital in Turkey. *Nurs Health Sci*. 2009;11:410-416, <https://doi.org/10.1111/j.1442-2018.2009.00475.x>.
44. Hanrahan NP, Aiken LH, Mc Claine L, Hanlon AL. Relationship between psychiatric nurse work environments and nurse burnout in acute care in general hospitals. *Issues Ment Health Nurs*. 2010;31:198-207, <https://doi.org/10.3109/01612840903200068>.
45. Santinello, M. LBQ Link Burnout Questionnaire. Manuale. Firenze: Giunti O.S. Organizzazioni Speciali; 2008
46. Jaworowska A. Kwestionariusz Wypalenia Zawodowego LBQ M. Santinello. Polska normalizacja. Warszawa: Pracownia Testów Psychologicznych PTP; 2014.
47. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *Journal of Health and Social Behavior* 1983;24(4): 385–396.
48. Ogińska-Bulik N, Juczyński Z. Narzędzia Pomiaru Stresu i Radzenia Sobie ze Stresem. Warszawa: Polskie Towarzystwo Psychologiczne; 2008.
49. Kealy D, Halli P, Ogrodniczuk JS, Hadjipavlou G. Burnout among Canadian psychiatry residents: a national survey. *Can J Psychiatry*. 2016;61:732-6.
50. Carneiro Monteiro GM, Marcon G, Gabbard GO, Baeza FLC, Hauck S. Psychiatric symptoms, burnout and associated factors in psychiatry residents. *Trends Psychiatry Psychother*. 2021;43(3):207-216. <https://doi.org/10.47626/2237-6089-2020-0040>.
51. Yao H, Wang P, Tang YL, Yuanli Y, Liu T, Liu H, et al. Burnout and job satisfaction of psychiatrists in China: a nationwide survey. *BMC Psychiatry*. 2021;21:593 <https://doi.org/10.1186/s12888-021-03568-6>.
52. Chambers ChNL, Frampton ChMA. Burnout, stress and intentions to leave work in New Zealand psychiatrists; a mixed methods cross sectional study. *BMC Psychiatry*. 2022;22:380 <https://doi.org/10.1186/s12888-022-03980-6>.
53. Hodkinson A, Zhou A, Johnson J, Geraghty K, Riley R, Zhou A, et al. Associations of physician burnout with career engagement and quality of patient care: systematic review

- and meta-analysis. *BMJ*.2022;378:e070442, <https://doi.org/10.1136/bmj-2022-070442>.
54. Talih F, Warakian R, Ajaltouni J, Shehab AAS, Tamim H. Correlates of depression and burnout among residents in a Lebanese academic medical center: a cross-sectional study. *Acad Psychiatry*. 2016;40(1):38-45.
55. Chang R, Fitzgerald PC, Almeida MD, Castro-Alves LS, Ahmad S, McCarthy RJ. The prevalence of burnout and depression and their association with adherence to safety and practice standards: a survey of United States anesthesiology trainees. *Anesth Analg*. 2013;117:182-193, <https://doi.org/10.1213/ANE.0b013e3182917da9>.
56. Maslach Ch, Leiter M. Understanding the burnout experience: recent research and its implications for psychiatry. *World Psychiatry*. 2016;15(2):103-111, <https://doi.org/10.1002/wps.20311>.
57. Schröder J. Wypalenie zawodowe – drogi wyjścia. Warszawa: Wydawnictwo Edu; 2008. Polish.
58. Bartkowiak G. Człowiek w pracy: od stresu do sukcesu w organizacji. Warszawa: Polskie Wydawnictwo Ekonomiczne; 2009. Polish.
59. Hoffman AJ, Scott LD. Role stress and career satisfaction among registered nurses by work shift patterns. *J Nurs Adm*. 2003;33:337-342.
60. Duquette A, Sandhu K, Beaudet L: Factors related to nursing burnout: A review of empirical knowledge. *Issues Ment Health Nurs*. 1994;15:337-358.
61. Anczewska M. Czynniki wypalające personel psychiatrii — jak tego zjawiska uniknąć. Warszawa: Wydawnictwo IPiN; 2006. Polish.
62. Ferarri S, Cuoghi G, Mattei G, Carra E, Volpe U, Jovanovic N et al. Young and burnt? Italian contribution to the international BurnOut Syndrome Study (BOSS) among residents in psychiatry. *Medicina del Lavoro* 2015;106(3):172-185.
63. Meeusen V, Van Dam K, Brown-Mahoney C. Burnout, psychosomatic symptoms and job satisfaction among Dutch anaesthetists: a survey. *Acta Anaesthesiol Scand*. 2010; 616-621, <https://doi.org/10.1111/j.1399-6576.2010.02213.x>.
64. Chew QH, Ang LP, Tan LL, Chan HN, Ong SH, Cheng A, et al. A cross-sectional study of burnout and its associations with learning environment and learner factors among psychiatry residents within a National Psychiatry Residency Programme. *BMJ Open*. 2019;9:e030619. <https://doi.org/10.1136/bmjopen-2019-030619>.
65. Keeton K, Fenner DE, Johnson TR, Hayward RA. Predictors of Physician Career Satisfaction, Work–Life Balance, and Burnout. *Obstet Gynecol*. 2007;109(4):949-55, <https://doi.org/10.1097/01.AOG.0000258299.45979.37>.
66. Nimmawitt N, Wannarit K, Pariwatcharakul P. Thai psychiatrists and burnout: A national survey. *PLoS ONE*. 2020; 15(4):e0230204. <https://doi.org/10.1371/journal.pone.0230204>.
67. Frank E, McMurray JE, Linzer M, Elon L. Career satisfaction of US women physicians: results from the Women Physicians' Health Study. Society of General Internal Medicine Career Satisfaction Study Group. *Arch Intern Med*. 1999;159:1417–26.
68. Jovanovic N, Podlesek A, Volpe U, Barrett E, Ferarri S, Rojnic et al. Burnout syndrome among psychiatric trainees in 22 countries: Risk increased by long working hours, lack of supervision, and psychiatry not being first career choice. *Eur Psychiatry*. 2016;32:34-41, <https://doi.org/10.1016/j.eurpsy.2015.10.007>.
69. Rey JM, Walter G, Giuffrida M. Australian psychiatrists today: proud of their profession but stressed and apprehensive about the future. *Aust N Zeal J Psychiatry*. 2004;38:105–110, <https://doi.org/10.1080/j.1440-1614.2004.01320.x>.