

The mediating role of types of coping styles in the relations between temperamental traits and staff burnout among psychiatric nurses

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Summary

Aim: Temperamental traits are indicated as some predictors of occupational burnout. At the same time, researchers emphasize that the importance of temperamental features for occurrences of burnout syndrome in medical staff is dependent on numerous intermediary variables, including ways of handling problematic situations. The overarching aim of presented studies was to examine whether styles of coping with stressful situations mediate relationships between temperamental traits and particular components of occupational burnout in psychiatric nurses.

Method: The study examined 60 women working in the psychiatric healthcare sector. Three psychological methods were employed in this research project: (1) *Strelau Temperament Inventory* by Strelau and Zawadzki (STI); (2) *Coping Inventory for Stressful Situations* by Endler and Parker (CISS); (3) *Maslach Burnout Inventory – Human Services Survey* (MBI-HSS).

Results: Conducted analyses allowed to confirm the mediating role of task style and emotional style in relationship between temperamental traits (briskness, perseveration, emotional reactivity, sensory sensitivity, activity) and occupational burnout. In the case of avoidance style there are no grounds to consider it as a mediator in the area of analyzed dependencies.

Conclusions: Providing psychiatric nurses with help: (1) should focus more on strengthening task style, rather than on rising awareness regarding the harmfulness of avoidance tendencies in the area of coping; (2) what seems important is developing the ability to experience negative emotions revealed in contacts with patients in a creative way.

Key words: burnout syndrome, temperamental traits, coping styles, psychiatric nursing

Introduction

Burnout is one of the pivotal problems concerning work in professions characterized by constant contact with patients and being emotionally involved in patients' problems [1, 2]. The issue of burnout is topical, due to increasing number of scientific

papers regarding conditions of burnout and consequences of this phenomenon in various professional groups, including medical staff [3]. Given the results of studies conducted so far, one of the professions at major risk of burnout is nursing [4]. This proposition is supported by, among others, the conclusions reached during the international scientific conference devoted to the phenomenon of burnout in nurses held in Sydney, Australia on September 7–9, 2017 [5]. Scientific literature concerning the subject of burnout also emphasizes that in the discussed occupational group, nurses working in the psychiatric healthcare sector are particularly susceptible to stress and burnout [6–9]. It results largely from the specificity of their work. Psychiatric patients are usually chronically ill, often do not show the willingness to become involved in their treatment and are rather reluctant to seek cooperation with healthcare facility staff [10, 11]. Issues regarding work organization of psychiatric nurses also play an important role (professional status, shift work system, sedentary nature of work, unfavorable locum conditions, little social support) [12]. Due to such circumstances, the work of psychiatric nurses involves high risk of stress which leads to manifestation of occupational burnout syndrome [13].

This fact creates the necessity to undertake a series of planned and systematic actions the aims of which include raising professional (and personality-related) competences of psychiatric healthcare staff as well as carrying out educational projects focused around those competences and aimed at occupational burnout prevention [14]. The achievement of this goal is aided, among others, by the search for correlates and/or predictors of occupational burnout typical of this profession [15–17]. The analysis of research conducted in this area assures that among the factors associated with burnout experienced by nursing staff, temperamental traits play an important role [18–20]. However, taking into consideration the fact that the goal of research is not only “identification and description of certain regularities expressed with scientific propositions legitimized by empirical demonstration of an effect or dependence”, but also “explanation of why such an effect or regularity manifests itself” [21, p. 110], it was ascertained that in the discussion of relationships between temperamental traits and professional burnout in psychiatric nurses, it is not enough to acknowledge existing interdependencies. What is needed is a further stage focusing on the search for mediators of observed relationships, since relatively little is still known about why individual temperamental traits determine the severity of burnout in medical staff and about which mechanisms and factors mediate said relationships [22].

Based on main assumptions of the concept of occupational burnout by Maslach – which assumes that this construct is defined as a combination of emotional exhaustion, depersonalization and reduced personal accomplishment that may occur in individuals working with other people in a certain way [1] – and the results of research to date, it has been assumed that variables that can mediate the relationship between temperamental traits and occupational burnout in psychiatric nurses are styles of coping with stressful situations [23, 24]. Temperament – understood here in terms of the regulatory theory of temperament by Strelau – permeates all spheres of individual’s behavior, thereby influencing the perception of difficult situations and the manner of coping with them [25, p. 329–335].

Coping with stress is the activity a person undertakes in a difficult situation and there is no doubt that working with psychiatric patients can be considered as such [10, 11]. The aim of coping is to reduce emerging tension. According to the proposal put forward by Endler and Parker, activities undertaken by an individual to solve a problem that generates stress should be treated as a fixed and repetitive pattern (style) – task style, emotional style or avoidant style. Task style is characterized by expending effort in order to solve a problem. Emotional style concerns focus on oneself and one's experiences. Avoidant style is characterized by the lack of willingness to think about a problem and to solve it [26]. Studies conducted by Strelau et al. [25] on temperament and ways of coping with stressful situations confirmed the existence of strong (positive and negative) relationships between particular coping styles and individual temperamental traits. Statistically significant correlations were noted between emotional style and perseverance, emotional reactivity (positive) and endurance (negative). Additionally, a positive relationship was found between avoidant style and temperamental activity as well as between task style and sensory sensitivity.

However, the results of research concerning the interrelations between styles of coping with stressful situations and occupational burnout in nursing staff point out that individuals preferring problem-focused coping exhibited high resistance to occupational burnout. One of the findings was that there are negative correlations between task style and emotional exhaustion as well as positive relationships between emotional style and burnout dimensions such as emotional exhaustion or depersonalization. In the case of avoidance-focused coping scale, the obtained results indicate that the tendency to avoid problem solving significantly reduces the level of personal accomplishment [27, 28].

In reference to above-mentioned findings, the main goal of the presented research was to test the mediating role of styles of coping with stressful situations in relationships between certain temperamental traits and dimensions of occupational burnout. The main research problem was encapsulated in the following question: "Do styles of coping with stressful situations mediate relationships between temperamental traits and individual components of occupational burnout in psychiatric nurses?". Given the relatively small number of empirical studies regarding the mediating role of styles of coping with stressful situations in relationships between temperament and occupational burnout, the presented research project is of exploratory nature, which makes it possible to forgo the formulation of research hypotheses.

Material and method

The subjects of the research were 106 people (medical staff, nurses, psychologists, certified psychotherapists)¹ employed in various psychiatric wards in the Independent

¹ Originally, the project was to concern broadly understood medical staff working with patients suffering from mental disorders.

Public Provincial Psychiatric Hospital in Radecznica². 73 of the subjects returned questionnaires completed in full or in part. Participation in the research was entirely voluntary and anonymous. Therefore, people who had been asked to complete the questionnaires but did not submit them in due time had no obligation to justify their decision. The vast majority of collected questionnaires (60) were submitted by psychiatric nurses. As a result, a decision was made to limit the research problem to this occupational group, thus questionnaires of 60 women (nurses)³ qualified for the final analyses. The mean age in the sample was $M = 45.21$ ($SD = 5.81$). The great majority of the examined women lived in the countryside (93.3%). The respondents varied in terms of levels of their education. More than half of the subjects (56.7%) have secondary education and 43.3% reported having higher education. The analysis of marital status revealed that the substantial majority of surveyed nurses were married (80%). Divorcees, maidens and widows account for 20% of all the subjects. More detailed data are presented in Table 1.

Table 1. The Participants' demographic characteristics

Demographic characteristics		Research sample	
		M	SD
Age		45.21	5.81
Work experience		22.37	8.68
		N	%
Place of residence	Village	56	93.3
	Town	4	6.7
Education	Secondary	34	56.7
	Higher	26	43.3
Marital status	Single	3	5.0
	Married	48	80.0
	Divorced	6	10.0
	Widowed	3	5.0

Three tools for psychological measurement were used in the study. *The Maslach Burnout Inventory* (MBI) by Maslach and Jackson was used to assess burnout in nurses (dependent variable). This tool consists of 22 statements of self-describing

² The Independent Public Provincial Psychiatric Hospital in Radecznica employs 302 people and has 422 beds for patients at its disposal. It has a professional and perfectly prepared medical and nursing staff. It employs 19 medical personnel, 96 nurses, 8 psychologists and 3 certified psychotherapists. Four people are taking or have completed a specialist course on addiction psychotherapy. The hospital also employs 18 instructors of addiction therapy and occupational therapy (source: <http://radecznica.pl/historia/>, retrieved: 10.09.2018).

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nature. Individual items are rated on a 7-point scale, where 0 means 'Never' and 6 'Every day'. The MBI enables the assessment of occupational burnout in three dimensions: emotional exhaustion (EE), depersonalization (D) and reduced personal accomplishment (RPA). Several parallel versions of the questionnaire dedicated to various occupations (working sites) in danger of burnout have been developed so far. One of them is the MBI – *Human Services Survey* (MBI-HSS). This version is used to perform the measurement of occupational burnout among representatives of social services professions, including nurses. The presented research project utilizes a Polish adaptation of the said survey by Pasikowski, characterized by acceptable psychometric indicators. The Cronbach's alpha for individual questionnaire scales is 0.85 (EE), 0.60 (D) and 0.76 (RPA) [29].

The Strelau Temperament Inventory (STI) by Strelau and Zawadzki was used to measure temperamental traits (independent variables) [30]. This method contains 120 items that allow the description of six dimensions (scales) of temperament, such as: briskness (B), perseveration (PE), sensory sensitivity (SS), emotional reactivity (ER), endurance (E), and activity (A). The examined person is to answer individual questions by choosing one of two answers ('Yes' or 'No'). The tool is distinguished by its very good psychometric indicators. Reliability coefficients (Cronbach's alpha) for particular STI scales vary from 0.72 (SS) to 0.88 (W).

The Coping Inventory for Stressful Situations (CISS) developed by Endler and Parker; in its Polish adaptation by Szczepaniak, Strelau and Wrześniewski [26]; was used to characterize the preferred styles of coping with stressful situations (mediator variables). This tool consists of 48 items for measuring the following styles of coping: task-oriented style (TS), emotion-oriented style (ES) and avoidant style (AS). In the case of avoidant style, two dimensions of this style can be distinguished: engaging in substitutive activities (ESA) and seeking social contacts (SSC). While being examined, the subjects determine the frequency with which they undertake specific actions in difficult and stressful situations on a 5-point scale (the lowest value being 'Never' and the highest 'Always'). The reliability of the Polish version of the CISS questionnaire measured with Cronbach's alpha coefficient oscillates between 0.72 and 0.92.

In order to determine the mediating relationships, the collected data underwent statistical analysis using simple and multiple regression analysis [21]. In order to assess the mediating role of coping styles in relationships between temperamental traits and particular dimensions of burnout, the PROCESS procedure of IBM SPSS Statistics version 22.00 was used. This procedure enables examination of as many as 73 models of moderation, mediation or moderated mediation. The presented research project used the so-called Model 6 – multiple mediation model – with three mediators. In the tested model, task style, emotional style and avoidant style are sequential mediator variables (mediators) in the impact of temperament on occupational burnout of nurses (Figure 1). The choice of such a research model resulted from the fact that the simultaneous recognition of three styles of coping with stress as mediators of relationships between temperament and burnout to a greater extent reflects the actual relationships occurring between the analyzed variables. The Bootstrapping 10000 technique with corrected confidence intervals (95% CI) was used to estimate indirect

effects. According to recommendations found in the literature on methodology, the effects of mediation were considered significant only if the average estimation values of the indirect 'impact' were within the 95% confidence interval with the interval not containing zero [31].

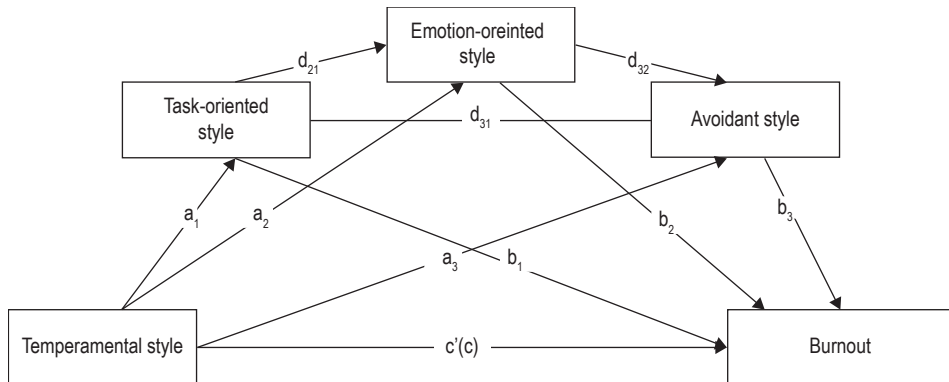


Figure 1. The schema of relations in multiple mediation model

Indirect effect of temperament traits on occupational burnout through TS = $a_1 b_1$

Indirect effect of temperament traits influence on occupational burnout through ES = $a_2 b_2$

Indirect effect of temperament traits influence on occupational burnout through AS = $a_3 b_3$

Indirect effect of temperament traits influence on occupational burnout through TS, ES and AS = $a_1 d_{21} d_{32} b_3$

Results

The first stage of statistical analyses involved calculating descriptive statistics in analyzed variables. Values of descriptive statistics – minima (Min.), maxima (Max.), mean (M), standard deviations (SD), skewness (SKE), and kurtosis (K) – of obtained distributions of results in each of the scales as well as the results of the Shapiro-Wilk test (S-W) of the compatibility of said distributions with normal distribution for the entire tested sample ($N = 60$) are presented in Table 2.

Table 2. Descriptive statistics of analyzed variables

VARIABLES		Descriptive statistics						
		Min.	Max.	M	SD	SKE	K	S-W
MBI	Emotional exhaustion	0.22	3.67	1.72	0.85	0.42	-0.51	0.97n.s.
	Depersonalization	0.00	2.80	0.74	0.76	1.11	0.63	0.86***
	Reduced personal accomplishment	0.00	5.13	1.82	1.09	0.74	0.34	0.95*

table continued on the next page

STI	Briskness	9.00	20.00	15.72	3.00	-0.47	-0.68	0.95**
	Perseveration	2.00	19.00	11.70	4.22	-0.22	-0.27	0.97n.s.
	Sensory sensitivity	7.00	20.00	15.28	2.93	-0.68	0.13	0.94**
	Emotional reactivity	1.00	19.00	10.92	4.23	-0.27	-0.31	0.98n.s.
	Endurance	2.00	20.00	10.48	4.05	0.00	-0.16	0.98n.s.
	Activity	1.00	18.00	7.52	3.86	0.64	0.33	0.96n.s.
CISS	Task-oriented style	2.44	4.88	3.72	0.51	-0.25	0.27	0.98n.s.
	Emotion-oriented style	1.50	4.50	2.99	0.62	0.02	0.07	0.99n.s.
	Avoidant style	1.38	3.69	2.58	0.51	-0.11	-0.28	0.99n.s.

*** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; n.s. $p > 0.05$ (Shapiro-Wilk test significance level)

The next stage involved performing the Pearson's r correlation coefficient analysis. The analysis was only an opening to examining mediation. Therefore, it was concluded that its full description is not necessary. Detailed results are presented in Table 3.

Table 3. The results of (Pearson's r) correlations among the analyzed variables

VARIABLES		1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.
1.	Age	—													
2.	Work experience	.90"	—												
3.	EE	.08	.11	—											
4.	D	.07	.08	.37"	—										
5.	RPA	.25'	.26'	.31"	.40"	—									
6.	TS	.06	.06	-.31"	-.30"	-.31"	—								
7.	ES	.11	.03	.35"	.19	.20	-.14	—							
8.	AS	.31"	.23'	.07	-.06	.08	.05	.18	—						
9.	B	.04	.12	-.16	-.20	-.09	.08	-.26'	.03	—					
10.	PE	-.10	-.14	.04	-.04	-.11	-.17	.37"	-.01	-.29'	—				
11.	SS	.17	.16	-.35"	-.12	-.10	.32"	-.22'	-.09	.08	-.14	—			
12.	ER	.00	-.00	.28'	.20	.27'	-.12	.45"	-.08	-.49"	.65"	-.21	—		
13.	E	.09	.21	-.06	.01	.04	-.11	-.21	-.01	.48"	-.41"	.06	-.57"	—	
14.	A	.09	.16	-.20	-.23'	-.24'	.10	-.43"	.25'	.38"	-.48"	.08	-.59"	.35"	—

MBI-HSS: EE – emotional exhaustion; D – depersonalization; RPA – reduced personal accomplishment; CISS: TS – task-oriented style; ES – emotion-oriented style; AS – avoidant style; STI: B – briskness; PE – perseveration; SS – sensory sensitivity; ER – emotional reactivity; E – endurance; A – activity.

Based on the obtained results, it was decided to include 8 out of 18 possible models for further analyses (six temperamental traits multiplied by three dimensions

of burnout). As the criterion a model had to meet in order to qualify, the assumption was made that mediation can take place when the relationship between independent variable (in the case of the presented research this is an individual temperamental trait) and a mediator (styles of coping with stressful situations) as well as between a mediator and dependent variable (dimensions of burnout) reached the level of statistical significance [21, 31]. Table 4 provides a concise description of models that met the above-mentioned criterion.

Table 4. Statistically significant ($p \leq 0.05$) relationship between independent variable and mediator and between mediator and dependent variable

INDEPENDENT VARIABLE	r	MEDIATOR	r	DEPENDENT VARIABLE
Sensory sensitivity	.32 ↔	Task-oriented style	.31 ↔	Emotional exhaustion
			-.30 ↔	Depersonalisation
			-.31 ↔	Reduced personal accomplishment
Briskness	-.26 ↔	Emotion-oriented style	.35 ↔	Emotional exhaustion
Perseveration	.37 ↔			
Sensory sensitivity	-.22 ↔			
Emotional reactivity	.45 ↔			
Activity	-.43 ↔			

The next stage involved the examination of the status of styles of coping with stressful situations as a mediator in relationships between temperament and burnout. Calculations for eight models were made (see Table 4). Due to the limited scope of this paper, only the models (six models) in which mediation effects manifested themselves are described.

In the first model (Figure 1), the mediating role of styles of coping with stressful situations in the relationship between briskness (B) and emotional exhaustion (EE) was investigated. By examining the indirect, sequential path of the impact of B on EE through task-oriented style (TS), emotion-oriented style (ES) and avoidant style (AS), it was demonstrated that the path did not reach the level of statistical significance ($a_1 d_{21} d_{32} b_3 = -0.00$; $SE = 0.002$; bootstrap CI: $-0.013-0.001$). On the other hand, analyzing indirect effects for individual mediators separately, statistically significant effects of the impact of B on EE were observed only in the case of ES ($a_2 b_2 = -0.19$; $SE = 0.12$; 95% bootstrap CI: $-0.511 - -0.025$). This means that greater readiness for a quick reaction and the ease to change behavior in response to external conditions

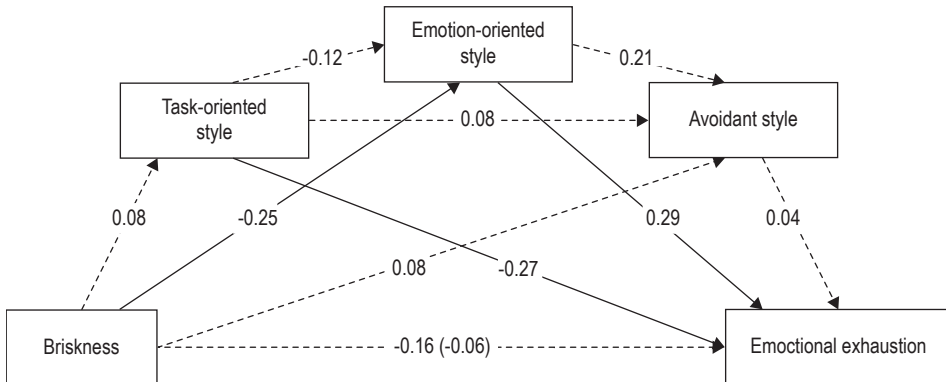


Figure 2. The schema of mediating role of coping styles in the relationship between briskness and emotional exhaustion

(path a_2) reduces the tendency to cope with problems by lowering emotional tension ($\beta = -0.25$; $p \leq 0.05$), which consequently significantly affects ($\beta = 0.29$; $p \leq 0.05$) the increase of excessive fatigue and depletion of emotional resources (path b_2). However, no similar dependencies were found for TS ($a_1b_1 = -0.06$; $SE = 0.12$; 95% bootstrap CI: $-0.398-0.097$) and AS ($a_3b_3 = 0.008$, $SE = 0.037$; 95% bootstrap CI: $-0.037-0.127$).

The next stage of statistical analyses examined the mediating role of styles of coping with stressful situations in the relationship between perseverance (PE) and emotional exhaustion (EE) (Figure 2). It was found that the indirect effect of the impact of PE on EE via task-oriented style (TS), emotion-oriented style (ES) and avoidant style (AS) is irrelevant ($a_1d_{21}d_{32}b_3 = 0.00$; $SE = 0.000$; bootstrap CI: $-0.000-0.001$). The analysis of indirect effects for individual coping styles (mediators) taken separately revealed that only ES ($a_2b_2 = 0.23$; $SE = 0.144$; 95% bootstrap CI: $0.016-0.597$) has the mediator

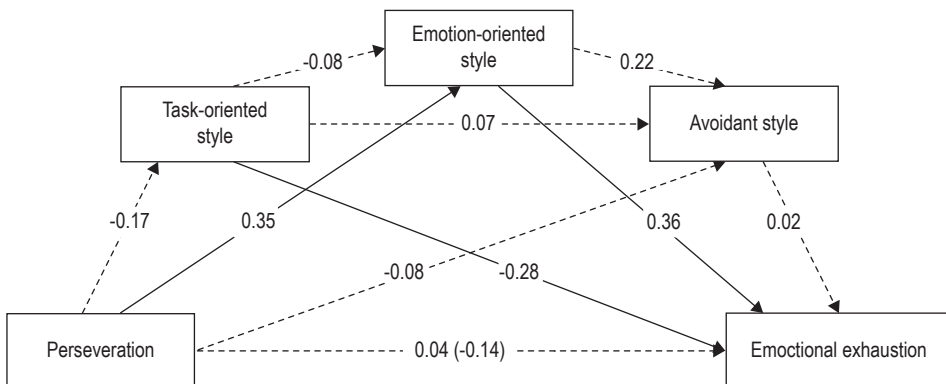


Figure 3. The schema of mediating role of coping styles in the relationship between perseverance and emotional exhaustion

status in the relationship between PE and EE. An interpretation of obtained results assumes that the greater the tendency to repeat and exhibit continuous behavior after particular stimulus ceases (path a_2), the stronger the tendency to cope with stress emotionally ($\beta = 0.35$; $p \leq 0.05$), which results in the decrease ($\beta = 0.36$; $p \leq 0.01$) of natural energy and enthusiasm for action (path b_2). In the case of TS ($a_1b_1 = 0.09$; SE = 0.121; 95% bootstrap CI: $-0.055-0.411$) and AS ($a_3b_3 = 0.00$; SE = 0.028; 95% bootstrap CI: $-0.089-0.037$), no such dependencies were found.

At the next stage of statistical analyses, the mediating role of coping styles in relationships between emotional reactivity (ER) and emotional exhaustion (EE) was examined (Figure 3). The analysis of the indirect effect according to the path: ER \rightarrow task-oriented style (TS) \rightarrow emotion-oriented style (ES) \rightarrow avoidant style (AS) \rightarrow EE, indicated that it is statistically insignificant ($a_1d_{21}d_{32}b_3 = 0.00$; SE = 0.002; bootstrap CI: $-0.000-0.013$). Statistically significant was only the indirect effect of the impact of ER on EE via ES ($a_2b_2 = 0.19$; SE = 0.116; 95% bootstrap CI: $0.019-0.527$). Therefore, it can be assumed that high excitability coupled with low emotional resilience (path a_2) intensifies the tendency to resign from taking real actions to solve a stressful situation ($\beta = 0.44$; $p \leq 0.01$), which leads to the increase ($\beta = 0.024$; $p \leq 0.05$) of the sense of work-related depletion and exhaustion (path b_2). Indirect effects were not observed in the case of TS ($a_1b_1 = 0.06$; SE = 0.091, 95% bootstrap CI: $-0.061-0.315$) and AS ($a_3b_3 = -0.02$; SE = 0.045; 95% bootstrap CI: $-0.192-0.039$).

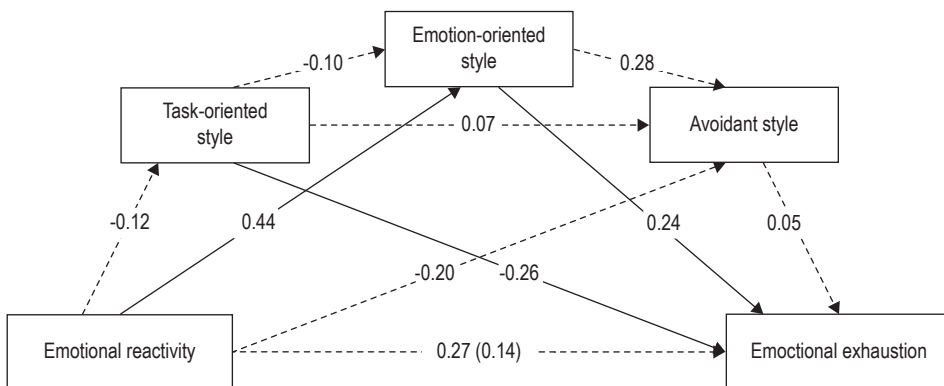


Figure 4. The schema of mediating role of coping styles in the relationship between emotional reactivity and emotional exhaustion

Subsequent stage involved the examination of the status of coping styles as a mediator in the relationship between activity (A) and emotional exhaustion (EE) (Figure 4). The analysis of the indirect path of the impact of A on EE through styles of coping with stressful situations examined cumulatively showed that it did not reach the level of statistical significance ($a_1d_{21}d_{32}b_3 = 0.00$; SE = 0.003; bootstrap CI: $-0.020-0.001$). On the other hand, the analysis of indirect effects for individual mediators separately confirmed statistically significant indirect effects of the impact of A on EE only in the

case of emotion-oriented style ($a_2b_2 = -0.23$; $SE = 0.144$; 95% bootstrap CI: $-0.614 - 0.015$). The obtained results pattern suggests that a strong tendency to exhibit highly stimulating behaviors (path a_2) significantly reduces the inclination to solve problems by focusing on negative emotions and wishful thinking ($\beta = -0.42$; $p \leq 0.01$), which contributes to the increase ($\beta = 0.27$; $p \leq 0.05$) in irritability and impulsiveness (path b_2). However, such dependencies were not demonstrated in the case of task-oriented style ($a_1b_1 = -0.05$; $SE = 0.101$; 95% bootstrap CI: $-0.334 - 0.099$) and avoidant style ($a_3b_3 = 0.04$; $SE = 0.094$; 95% bootstrap CI: $-0.109 - 0.286$).

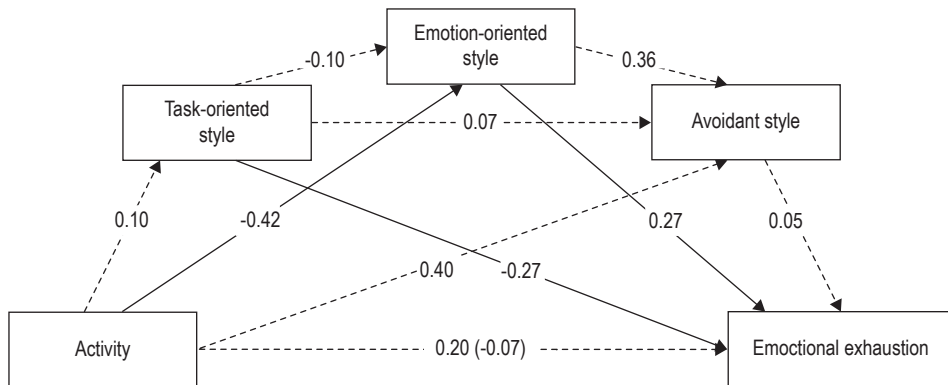


Figure 5. The schema of mediating role of coping styles in the relationship between activity and emotional exhaustion

The next stage of statistical analyses examined the indirect impact of sensory sensitivity (SS) on depersonalization (D) (Figure 5). In the case of the indirect effect progressing along the path: SS → task-oriented style (TS) → emotion-oriented style (ES) → avoidant style (AS) → D, the indirect effect was found to be statistically insignificant ($a_1d_{21}d_{32}b_3 = 0.00$; $SE = 0.003$; bootstrap CI: $-0.001 - 0.016$). Examination of the indirect, sequential path of the impact of SS on D through individual mediators separately proved only the significance of the following path: SS → TS → D ($a_1b_1 = -0.11$; $SE = 0.063$; 95% bootstrap CI: $-0.289 - -0.021$). It means that the ability to respond vigilantly where stimuli possess low stimulus value (path a_1) increases the readiness for problem-solving action ($\beta = 0.32$; $p \leq 0.05$), which in turn significantly reduces ($\beta = -0.28$; $p \leq 0.05$) negative, cynical, overly detached attitude towards other people (path b_1). Analogous dependencies were not found in the case of indirect effects of ES ($a_2b_2 = -0.04$; $SE = 0.051$; 95% bootstrap CI: $-0.218 - 0.016$) and AS ($a_3b_3 = -0.01$; $SE = 0.026$; 95% bootstrap CI: $-0.019 - 0.102$).

The last model (Figure 6) in which indirect effects were identified was the model of the impact of sensory sensitivity (SS) on reduced sense of accomplishment (RPA) through styles of coping with stressful situations being a mediator. Examining first the indirect, sequential path of the impact of SS on RPA through task-oriented style

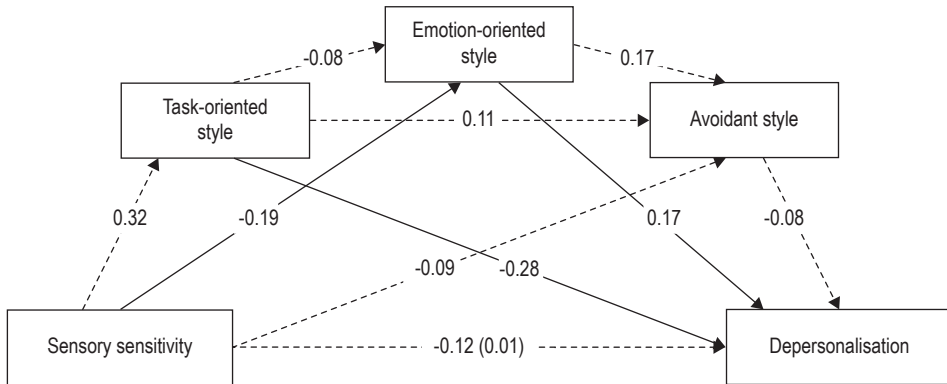


Figure 6. The schema of mediating role of coping styles in the relationship between sensory sensitivity and depersonalization

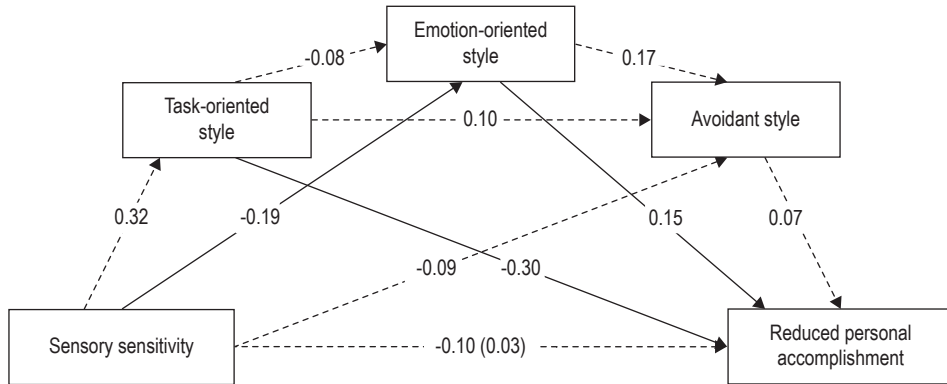


Figure 7. The schema of mediating role of coping styles in the relationship between sensory sensitivity and reduced personal accomplishment

(TS), emotion-oriented style (ES) and avoidant style (AS) showed that it did not reach the level of statistical significance ($a_1 d_{21} d_{32} b_3 = 0.00$; $SE = 0.006$; bootstrap CI: $-0.039-0.002$). However, the analysis of indirect effects for individual mediators separately showed statistically significant effects of the impact of SS on RPA only in the case of TS ($a_1 b_1 = -0.29$; $SE = 0.172$; 95% bootstrap CI: $-0.709- -0.011$). Based on these results, it can be assumed that with the increase in vigilance in responding to stimuli with low stimulus value (path a_1) the approach to an encountered problem becomes more constructive ($\beta = 0.32$; $p \leq 0.05$), which results in decrease ($\beta = -0.30$; $p \leq 0.05$) in the sense of lack of competence and effectiveness of work. However, no similar dependencies were found in the case of ES ($a_2 b_2 = -0.08$; $SE = 0.116$; 95% bootstrap CI: $-0.500-0.049$) and AS ($a_3 b_3 = -0.02$; $SE = 0.053$; 95% bootstrap CI: $-0.225-0.038$).

Discussion

Conducted studies confirmed that out of three coping styles, only two of them – task-oriented style (TS) and emotion-oriented style (ES) – have the mediator status in relationships between temperament and occupational burnout in psychiatric nurses. 8 models of mediation were tested in total. In investigating the indirect, sequential path of the impact of the independent variable (individual temperamental traits) on the dependent variable (dimensions of occupational burnout) through three mediators simultaneously (styles of coping with stressful situations), the tested effect was not statistically significant in any of the 8 models. The analysis of indirect effects for individual coping styles (mediators) taken separately showed that: (1) TS is a mediator in the relationship between sensory sensitivity (SS), depersonalization (D) and reduced personal accomplishment (RPA); (2) ES has the mediator status in relationships between briskness (B), perseveration (PE), emotional reactivity (ER), activity (A), and emotional exhaustion (EE); (3) avoidant style (AS) is not a mediator between temperamental traits and occupational burnout.

The pattern of obtained results corresponds with the results of other studies on the phenomenon of occupational burnout and its underlying mechanisms. An interesting research project pertaining to conditions of burnout in the area of coping with stress strategies was conducted by Spanish scientists Jenaro, Flores and Arias [32]. The study included over two hundred active representatives of social professions. In the conclusion of their research, the authors state that high job satisfaction is related to active strategies for coping with stress. On the other hand, coping strategies focused on emotions or avoidance proved to be significant predictors of emotional exhaustion [cf. 33]. Similar conclusions were reached in Polish studies of Marcysiak et al. [34]. The results of these studies confirm that nurses who prefer a task-oriented approach to problematic situations exhibit high resistance to burnout. It was found that TS negatively correlates with EE, whereas it correlates positively with RPA. In the case of ES, positive relationships were noted both with EE and D. It was also found that AS positively correlated with RPA. Based on the obtained results, the authors concluded that the task-oriented approach to problems aids coping with stress in a proactive way and reduces the risk of occupational burnout syndrome in nurses.

Reading the research results referred to in this paper in the context of empirical findings concerning the issue of the 'impact' of temperament on the selection of specific strategies of coping with stressful situations, postulating the mediating role of coping styles in relationships between temperamental traits and individual dimensions of burnout becomes more understandable. According to Heszen [35], the way of dealing with a problematic situation is largely contingent on temperamental predispositions. The author carried out a research project on the relationship between temperament and activity in stressful situations. She made the regulatory theory of temperament the basis of her research. The obtained research results argue that B, ER and PE most prominently and negatively correlate with the strategy aimed at reducing negative emotions (similar dependencies were noted in the presented research, see Figures 1–3). Analogous relationships were identified in reference to A, yet the strength of correlation

was slightly lower and additionally covered both task-oriented and avoidant strategies (in this research A only affected ES, see Figure 4) [cf. 36].

The research results presented above [35] are consistent with the results obtained by Strelau et al. [25, p. 493], which indicate that: (1) TS is significantly and positively correlated with B, PE, SS, and A; (2) ES remains in negative relations with B, E and A, and positively correlates with PE; (3) ES co-occurs with PE and A, and the dependencies are positive. Comparing the results of research by Strelau [25] to the results of the study presented in this paper, it is worth emphasizing that the authors observed similar dependencies, also in the area of the (positive) 'impact' of SS on TS (see Figures 5–6).

This context also calls for reference to the results of studies on the relationships between burnout and temperament, the latter of which is described using *the Temperament and Character Inventory* (TCI) by Cloninger [37–39]. This reference seems all the more legitimate given that the Polish adaptation of this tool, developed by Hornowska [40], indicates its strong links with the STI by Strelau used in the presented project. Pilot studies conducted by Raycheva et al. [20] examined the susceptibility to occupational burnout of healthcare staff – general practitioners, palliative care physicians and nurses, psychiatrists, oncologists, emergency and intensive care staff – based on the psychological and biological model of temperament by Cloninger. The research included 73 randomly selected healthcare workers from groups listed above. The obtained results showed that two out of four dimensions of temperament – harm avoidance (tendency to suspend activities in response to negative stimuli) and persistence (the ability of unaided continuation of activities of particular kind), as well as two personality traits – self-directedness (human ability to control, regulate and adjust one's own behavior to adapt to the situation) and cooperativeness (human ability to identify and accept behaviors of other people) were correlated with susceptibility to burnout in all its areas (EE, D, RPA).

In other studies Yazici et al. [18] searched for predictors of occupational burnout in nurses in the area of temperamental traits measured with the TCI questionnaire. 108 randomly selected nurses working in Kocaeli Derince Training and Research Hospital (Turkey) participated in the study. The obtained research results proved that novelty-seeking (the tendency to actively respond to new stimuli) and harm avoidance correlate positively with high levels of burnout. On the other hand, dimensions of temperament such as perseveration, self-directedness and cooperativeness exhibit negative relationship with burnout. Regression analysis demonstrated that predictors of occupational burnout in the sample are: novelty-seeking and harm avoidance (positive impact) as well as cooperativeness (negative impact).

Finally, it should be noted that the research results discussed in this article do not authorize one to confirm the mediating role of AS in relationships between temperamental traits and occupational burnout. However, these results do correspond with findings in the literature on psychology. Jachnis's research project [41] on temperamental conditions of styles of coping with stressful situations in students showed that, in fact, ES was the only coping style that remained in numerous and significant relationships with temperamental traits. In the case of TS, no significant correlations

were observed, while in reference to AS, significant (negative) correlation occurred only with ER. In the already cited research by Strelau [25], AS also correlated only with PE and A. Consequently, the lack of the mediating role of AS in the 'impact' of temperament on occupational burnout may result, on the one hand, from weak links of temperamental traits with this way of responding to difficult situations while on the other hand, from the fact that – as showed in studies by Marcysiak et al. [34] – in the group of nurses, AS is related (significantly, although to a small extent) only with RPA. According to Strelau [25], the relationship between temperamental traits and the sense of personal accomplishment seems less coherent compared to remaining dimensions of burnout.

Practical conclusions

The completed research project allows for several practical conclusions to be made. However, special care in the interpretation and application of the conclusions is advised. This is mainly due to the limitations of the study, which are presented below.

In providing psychiatric nurses with psychological support, it is necessary to first assess their temperamental traits, which to a large extent allow to predict preferred styles of coping with stressful situations [cf. 35]. It also seems that more emphasis should be put on strengthening the task-oriented approach to problems that occur while working with patients who are mentally ill rather than on raising awareness of the harmfulness of avoidance tendencies in dealing with occupational problems. Moreover, it seems important to provide medical staff with psychiatric departments aimed at experiencing (working through) negative emotions that appear in contacts with patients, as it would reduce the risk of venting these emotions in a non-constructive manner.

Limitations of research and further research perspectives

Although the presented research contributes cognitively valuable results, it also has its limitations. First of all, this project has been carried out within a correlation scheme. Therefore, it is not advisable to come to cause-and-effect conclusions on the basis of the obtained results. Secondly, the study sample of psychiatric nurses was not representative, thus generalizing the research results should be done with utmost caution. Thirdly, the psychiatric nurses composing the study sample all come from a single hospital, which results in the obtained results being merely a reflection of how the psychiatric nurses function within this healthcare unit. Further studies should considerably expand the study sample size to include workers of various hospitals across the country. Fourthly, the completed research project focuses mainly on 'capturing' the relationship between temperamental traits, styles of coping with stressful situations and dimensions of occupational burnout. Other psychological variables that could have had impact on the profile of the obtained results were not controlled. It is recommended to carry out further studies that would take into account variables such as: the type of patients the nurses work with, the manner in which psychiatric care is organized and the personality of respondents.

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