

# The Interrelationships of Coping Styles and Professional Burnout Among Physiotherapists

## A Cross-Sectional Study

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**Abstract:** Burnout is a pathological syndrome in which emotional exhaustion (EE), depersonalization (DEP), and a reduced sense of personal accomplishment (PA) develop in response to prolonged occupational stress. Those working in the physiotherapy profession appear to be at risk for professional burnout brought on by the specific character of the medical professions, involving continuous contact with patients and associated stress, as well as poor working conditions. However, literature data concerning the scale of professional burnout and its psychosocial correlates remain scarce.

The aim of the present study was to assess the scale of professional burnout among physiotherapists and to determine the interrelationships between coping styles and burnout symptoms.

The sample consisted of 117 professionally active physiotherapists (90 women and 27 men) aged 21 to 55 years (mean [M] 31.88, standard deviation [SD] = 9.14, responsiveness rate of 80.6%) from randomly selected medical institutions of the Lodz Region. The study was conducted using the Maslach Burnout Inventory (MBI) and Coping Inventory for Stressful Situations (CISS) by Endler and Parker. Demographic and job-related data on the respondents were also collected.

Task-oriented coping correlated negatively with DEP, EE, and low PA, in contrast to emotion-oriented coping. No correlation was found between avoidance-oriented coping and burnout symptoms. Similarly, no interactive correlations between coping styles and particular burnout symptoms were confirmed.

Coping styles correlate independently with professional burnout, without any mutual correlations. Physiotherapists employing a wider spectrum of task-oriented strategies are slightly more satisfied with their job. The incidence of burnout syndrome in the analyzed group is

similar to that observed in other medical professions and requires the adoption of preventive measures.

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**Abbreviations:**  $\alpha = 0.05$  = significance level,  $\eta^2_p$  = partial eta squared, ANOVA = analysis of variance, AOC = avoidance-oriented coping, CISS = Coping Inventory for Stressful Situations, DEP = depersonalization, EE = emotional exhaustion, EOC = emotion-oriented coping, F = ANOVA F Test Statistic, ICD-10 = International Statistical Classification of Diseases and Related Health Problems 10th Revision, M = mean value, MBI = Maslach Burnout Inventory, p = probability level, PA = personal accomplishment, r = Pearson's correlation coefficient, SD = standard deviation, TOC = task-oriented coping.

## INTRODUCTION

By enabling the restoration of the physical fitness of patients, physiotherapists play an important role in the health care system. However, the effectiveness of the rehabilitation process depends on the emotional involvement of therapists and requires close physical contact with patients, often much closer than in the case of nurses or doctors.<sup>1,2</sup> Working with patients whose prognoses are unfavorable may generate feelings of concern and sympathy. Other causes of stress include lack of feedback or autonomy in making decisions, problematic relations with co-workers and superiors, as well as difficult working conditions such as long working hours, work overload, low salaries, the low prestige of the profession, or inadequate flexibility of the administration system.<sup>3-6</sup>

Coping is understood as cognitive and behavioral efforts undertaken to meet the external and internal requirements, which are burdensome or exceed the individual's resources.<sup>7</sup> Coping is believed to play a moderating role between stress and mental well-being, and therefore the stress consequences are dependent on coping efficacy.<sup>8</sup>

Endler and Parker (1990)<sup>9</sup> propose 3 coping styles: task-oriented coping (TOC), emotion-oriented coping (EOC), and avoidance-oriented coping (AOC). The last of these styles can take 2 forms: distraction, that is, engagement in alternative activities, or social diversion. The subjects preferring TOC undertake various activities to manage the stressful situation, making use of cognitive processes or searching for information, which may be favorable in the case of controllable situations. The subjects characterized by EOC focus on themselves and their emotional experiences, and undertake activities aimed at reducing emotional strain; they often demonstrate a negative attitude, which may even lead to increased stress and become unfavorable in the long run. Finally, AOC manifests as avoidance of confrontation with the source of stress. The subjects

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who choose it try to avoid confrontation, engaging in alternative activities, which can be favorable in uncontrollable situations.<sup>9</sup>

The coping style is an important factor influencing the secondary appraisal of the stress situation, the psychological costs associated with overcoming the problems, as well as the short- and long-term consequences of stress. The different coping styles have now been recognized as functioning on a complementary and non-exclusive basis, and even contributing to the achievement of similar goals. Therefore, there is a need for their mutual influence to be determined in the context of burnout symptoms. However, few studies of the global importance of coping styles have been conducted in healthy and patient populations, and no conclusive results have been obtained.<sup>10</sup>

It seems that TOC and EOC can support and complement each other in the same stressful situation, with the potential additional role of AOC. For example, a physiotherapist tries to reduce emotional strain by ventilation or self-complacency to be able to prepare for a difficult talk concerning a conflict in the workplace with his supervisor (TOC). Additionally, he or she may refrain from taking any action for a day or two, waiting for developments (AOC). The association between burnout syndrome and coping profiles, that is, the interrelationships between coping styles, has not yet been fully investigated.

The development of professional burnout is influenced by numerous intrapersonal and situational factors, such as length of service or satisfaction with health and private life.<sup>11,12</sup> The results of some studies suggest that coping style may be another such factor.<sup>13</sup> The data concerning the specificity of burnout and coping in physiotherapists are still scarce in the relevant literature, which may indicate their marginalization with respect to other health professionals.

Although burnout syndrome does not constitute a separate nosological entity, it has been included in ICD-10 classification as Z 73.0, and it may be a disorder underlying other disease entities. Its consequences may include deterioration of psychological and physiological functions, disturbances of cognitive functions, somatic and physiological arousal, reduced cellular immunity, lower morale, low productivity, absenteeism, job turnover, alcohol or drug abuse, and other effects.<sup>14,15</sup> The ternary model of burnout syndrome developed by Jackson and Maslach<sup>16</sup> defines burnout as a syndrome of emotional exhaustion (EE), depersonalization (DEP), and reduced sense of personal accomplishment (PA).<sup>16,17</sup>

Burnout has been thoroughly investigated in a number of helping professions and social services.<sup>18,19</sup> Considering the specific character of medical professions, involving continuous contact with patients and the associated stress, as well as poor working conditions, the physiotherapist appears at risk of professional burnout. Studies of burnout in physiotherapists have also identified time pressure, role conflict, and role ambiguity as significant causes of burnout. Role conflict may developed in response to incompatible organizational demands, whereas role ambiguity may be caused by unclear expectations or uncertainty around authority and responsibilities.<sup>1,20–22</sup> As indicated by the literature review concerning burnout among physiotherapists, the scale of this phenomenon may vary between countries, which probably results from differences in the organization of health care systems and working conditions, as well as in the research methodology.<sup>1,23–25</sup>

The aim of the presented study was to assess the scale of professional burnout among physiotherapists and to make a comprehensive analysis of correlations between coping styles and the degree of DEP, EE, and reduced sense of PA.

It is hypothesized (H1) that TOC correlates positively with the intensity of burnout symptoms, whereas EOC and AOC correlate negatively with the burnout symptoms. In addition, TOC, EOC, and AOC are presumed to have an interactive influence with regard to burnout levels (H2), with lower burnout severity associated with a higher level of all coping styles, and a decreased profile of coping associated with higher burnout severity.

## METHOD

This investigation employs a cross-section design and quantitative methods with standardized psychometric tools, which are standard in psychological assessment.

### MBI Questionnaire

The criteria of assessment of the results were based on the Maslach MBI Questionnaire<sup>16,26</sup> consisting of 22 test items divided into 3 subscales: EE, DEP, and PA (ie, Personal Accomplishment – a decreased sense of work-related competence and achievement in professional relationships). The first category (EE) describes the feelings in a general sense, DEP relates to behavior, and PA involves cognitions and feelings affecting self-efficacy. Responses with higher scores for EE and DEP categories correlate with a higher burnout level, whereas a lower score on the PA scale would indicate a reduced sense of PA. Although Pasikowski<sup>26</sup> reports that the PA and EE scales have good internal consistency values, the Cronbach alpha for DEP was estimated at 0.59.

### CISS Questionnaire

The coping styles were assessed using the CISS Questionnaire developed by Endler and Parker and adapted by Strelau et al.<sup>9,27</sup> It consists of 48 statements describing the individual's behavior in a stressful situation. The respondent scores the frequency of a particular behavior on a 5-point scale. This tool makes it possible to calculate the scores in 3 scales: TOC, EOC, and AOC. The minimum score that can be obtained within each scale is 16 and the maximum one 80.<sup>27</sup> Estimated alpha Cronbach internal consistency coefficients of 0.84 to 0.91 have been reported by Endler and Parker.<sup>9</sup>

### Additional Questions

A questionnaire composed of demographic variables including age, sex, place of residence, marital status, and duration of employment in years was developed for the purpose of the study.

## MATERIAL

The study was approved by the Medical University of Lodz Bioethics Committee. It was conducted between December 2009 and March 2011 in state health care institutions (both outpatient and inpatient) among professionally active physiotherapists.

The inclusion criteria for the institutions were the geographical location (Lodz region, Poland) and that the location provides physical therapy. In total, 30 of 42 randomly selected medical institutions of the Lodz region were interested in participation. Regarding the participants, the inclusion criteria comprised graduating from University with a Bachelors/Masters degree in Physiotherapy and Polish being the mother tongue of the participant. The following exclusion criteria were adopted: leave of absence or being on holiday >14 days, being involved with any other part-time job in social services.

Initially, the full total of available therapists who met the criteria was 145. Formal consent was given by 122 respondents (84.1%) who completed the questionnaires. Five cases with missing data were removed from the analysis, as this accounted for a relatively small proportion of the whole sample. The overall complete response rate was 80.6% (Table 1).

Most of the study participants were within the 20 to 30 years' age group, whereas subjects over 50 years of age comprised the least numerous group. The group was differentiated with respect to marital status and the places of residence. The majority of the respondents had been working for <5 years. The vast majority of the subjects worked >20 hours a week.

**Statistical Analysis**

Mean values (M), median, and standard deviation (SD) were used to characterize the studied population. Relationships between variables were assessed using Pearson correlation coefficient (r). Compliance with a normal distribution was checked using the Shapiro-Wilk test. To check whether the sex affected results in burnout scales, the Mann-Whitney test was used.

The significance of differences between the means was assessed using 3-way analysis of variance (ANOVA) in the intergroup design. The factors were constructed by dividing the respondents according to the results concerning their coping styles, taking the median as a criterion for division. In this way, 3 factors were obtained, each with 2 levels: decreased score for a particular strategy and increased score for that strategy. Individuals with a result equal to the median were included in the decreased score category.

Three-way ANOVA was performed for different burnout scales: EE, DEP, and PA in Scheme 2 (decreased TOC results, increased TOC results) × 2 (decreased EOC results, increased EOC results) × 2 (decreased AOC results, increased AOC results). To assess the strength of the phenomenon, the effect

size, partial eta squared ( $\eta^2_p$ ) was used, which gives the percentage of the total variance of the result variable explained by the independent variables.

For all analyses, significance level ( $\alpha = 0.05$ ) was adopted as the maximum acceptable probability of type I error. To minimize the risk of measurement error and bias, internationally recognized questionnaires that had been validated in Poland were used, whose psychometric properties are known to be satisfactory. To decrease the sampling bias, participants were recruited from rural, semi-urban, urban, and metropolitan areas.

The analyses and graphical presentation of the results were performed using the following statistical packages: SPSS 21.0 PL for Windows and GNU R 3.1.1 for Windows.

**RESULTS**

The mean results obtained in the burnout scales and coping scales, as well as the coefficients of correlations between the analyzed variables, are presented in Table 2. The results of the Mann-Whitney test failed to confirm any differentiation of the particular burnout scales according to sex. There is no generally accepted cut-off score for MBI among physiotherapists. The cut-off scores were derived for each MBI scale based on one standard deviation above/below the sample mean. To determine a high level of burnout, a score of >22 was identified for high EE,  $\geq 11$  for DEP, and <23 for PA. In total, 17 % of the sample reported high EE, 16 % reported high DEP compared with 15% reporting decreased PA.

Correlational analysis of duration of work experience and coping styles was performed. The results confirm that no statistically significant relationships exist among these variables, with an exception of small correlation between working experience and AOC ( $r = -0.22, P = 0.017$ ). This result was expected since our sample was based mainly on physiotherapists with a relatively short duration of employment: the third quartile of working experience variable is 7 years. Further

**TABLE 1.** Sample Characteristics

		Number of Participants	Percentage
Sex	Men	27	22.3%
	Women	90	77.7%
Age	Range	21–55	
	Mean	31.88	
	Standard deviation	9.14	
	Under 30 years old	81	69.2%
	30–50 Years' old	28	23.9%
	Above 50 years' old	8	6.9%
Marital status	Single	73	62.4%
	Married	37	31.6%
	Divorced and separated	6	5.1%
	Widowed	1	0.9%
Place of residence	Rural areas	15	12.8%
	Towns with <50 k population	29	24.8%
	Towns with 50–100 k population	15	12.8%
	Towns with 100–500 k Population	25	21.4%
	Towns with >500 k population	33	28.2%
Length of employment	Less than 5 years	77	65.8%
	Within 5–20 years	23	19.7%
	More than 20 years	17	14.5%
Number of working hours per week	More than 20 hours		87.2%
	Exceeded 40 hours		23.9%

**TABLE 2.** Descriptive Statistics and Results of Correlation Analysis

Variables	Mean (N = 117)	SD (N = 117)	Median (N = 117)	Shapiro- Wilk Normality Test (N = 117, df = 117)		Pearson Correlation Coefficient <i>r</i>				
						EE	DEP	PA	TOC	EOC
1. EE	14.15	8.72	13.00	0.97	0.005					
2. DEP	5.35	5.57	4.00	0.86	0.001	0.56 ( <i>P</i> < 0.001)				
3. PA	31.88	9.18	32.00	0.98	0.08	-0.29 ( <i>P</i> < 0.001)	-0.46 ( <i>P</i> < 0.001)			
4. TOC	58.14	8.36	57.00	0.98	0.18	-0.25 ( <i>P</i> = 0.007)	-0.34 ( <i>P</i> < 0.001)	0.39 ( <i>P</i> < 0.001)		
5. EOC	43.07	10.34	43.00	0.98	0.14	0.33 ( <i>P</i> < 0.001)	0.37 ( <i>P</i> < 0.001)	-0.31 ( <i>P</i> < 0.001)	-0.08 ( <i>P</i> = 0.38)	
6. AOC	48.02	8.61	48.00	0.99	0.85	0.10 ( <i>P</i> = 0.27)	0.03 ( <i>P</i> = 0.73)	-0.01 ( <i>P</i> = 0.95)	0.05 ( <i>P</i> = 0.58)	0.12 ( <i>P</i> = 0.20)

AOC = avoidance-oriented coping, DEP = depersonalization, df = degrees of freedom, EE = emotional exhaustion, EOC = emotion-oriented coping, N = number of participants, *P* = probability value, PA = personal accomplishment, SD = standard deviation, TOC = task-oriented coping.

analyses controlling the employment duration could be conducted if the proportion of participants with longer working experience, that is, of >10 years, had been higher.

The dimensions of burnout demonstrate positive correlations, whereas the coping styles show no significant correlations. Weak negative correlations between TOC and the dimensions of burnout, and similarly weak positive correlations between EOC and burnout dimensions were observed.

Analyses using the Mann-Whitney test failed to identify any sex-related differentiation in the particular burnout scales.

The division of respondents according to the median results obtained for the particular coping styles is illustrated in Figure 1. The presented average results obtained by the subjects in the particular segments, as well as the standard deviations, indicate that reduced or increased TOC and EOC results are combined with a fairly wide distribution of results concerning the burnout dimensions. The associations of burnout and AOC are not presented in Figure 1 due to the lack of correlation between these variables.

More conclusive results concerning the main effect and interaction of the factors (coping styles) with the burnout levels, presented in Table 3, were provided by 3-way analysis of variance.

## EE

A statistically significant difference was obtained for TOC ( $F [1109] = 6.94$ ;  $P = 0.01$ ;  $\eta^2_p = 0.06$ ) and EOC ( $F [1109] = 11.00$ ;  $P = .0012$ ;  $\eta^2_p = 0.09$ ). However, the effects of the interaction between the 3 factors did not reach statistical significance. Among subjects with decreased TOC results ( $M = 16.36$ ;  $SD = 9.13$ ), the degree of EE was higher than in those with greater TOC scores ( $M = 11.91$ ;  $SD = 7.72$ ). In contrast, subjects with increased EOC results were more exhausted emotionally ( $M = 16.84$ ;  $SD = 8.99$ ) than subjects with reduced EOC scores ( $M = 11.69$ ;  $SD = 7.74$ ). The differences in the mean levels of EE were found to have relatively low effect sizes.

## DEP

Three-way ANOVA revealed a statistically significant difference in the case of TOC ( $F [1109] = 12.55$ ;  $P < 0.001$ ;  $\eta^2_p = 0.10$ ) and EOC ( $F [1109] = 12.81$ ;  $P < 0.001$ ;  $\eta^2_p = 0.11$ ); however, no significant interaction was found between all 3 styles. Subjects with reduced TOC results demonstrated a higher average level of DEP ( $M = 7.03$ ;  $SD = 6.45$ ) than those with higher values ( $M = 3.64$ ;  $SD = 3.86$ ). Likewise, people with higher EOC results showed a greater level of DEP ( $M = 7.25$ ;  $SD = 6.17$ ) than those with lower results ( $M = 3.61$ ;  $SD = 4.31$ ). The effect size on differences in the average levels of DEP was small.

## PA

The task-oriented style ( $F [1109] = 8.68$ ;  $P < .001$ ;  $\eta^2_p = 0.07$ ) and the emotion-oriented style ( $F [1109] = 6.46$ ;  $P = .012$ ;  $\eta^2_p = 0.06$ ) differentiated significantly with regard to the PA results. No statistically significant effects were demonstrated concerning the interactive influence of the 3 factors (TOC, EOC, and AOC).

The mean score of the reduced sense of PA is higher in the study group with decreased TOC results ( $M = 29.37$ ;  $SD = 9.16$ ) than those with a higher TOC level ( $M = 34.43$ ;  $SD = 8.54$ ). A lower score on the PA scale indicates that the sense of work-related competence is compromised. The respondents with higher EOC results were found to feel less competent and successful ( $M = 29.46$ ;  $SD = 6.98$ ) than subjects with reduced results for that style ( $M = 34.10$ ,  $SD = 10.38$ ). However, the PA differences revealed between the groups had small effect size.

The performed ANOVA failed to confirm the hypothesis that 2 or 3 of the coping styles interact with each other. This could show the combined effects of coping styles (factors) on EE, DEP, and reduced sense of accomplishment observed within the study group.

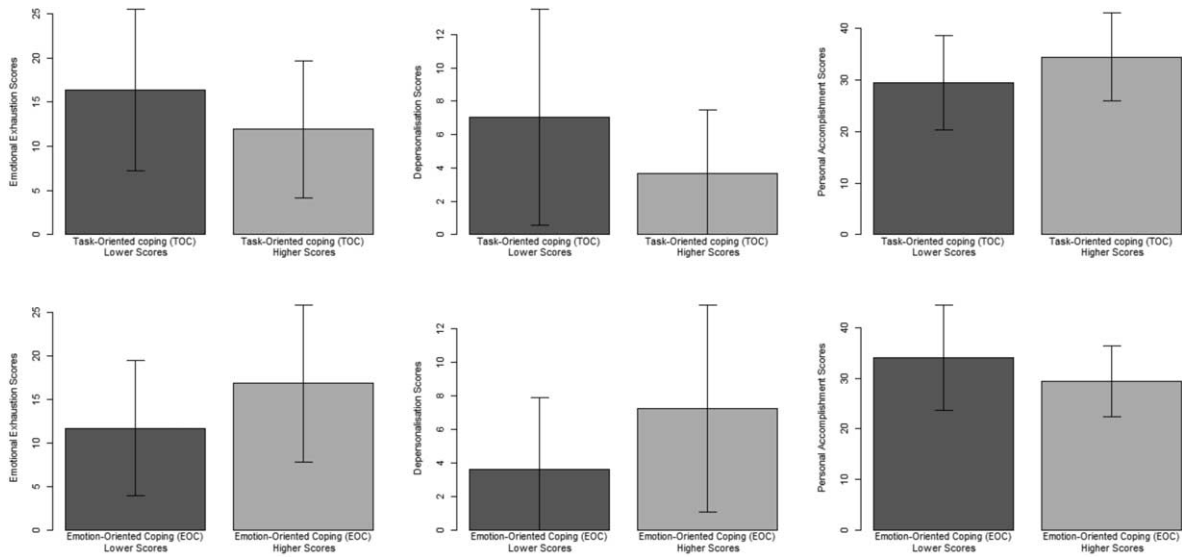


FIGURE 1. Mean values and standard deviations in burnout scales according to the intensity of task- and emotion-oriented styles (decreased, increased).

**DISCUSSION**

Other authors have described comparable results regarding the intensity of burnout symptoms among physiotherapists. The average severity of the phenomenon among physiotherapists ranges from 5.98 to 9.19 on the DEP scale, from 20.58 to 23.64 on the EE scale, and between 34.36 and 37.26 on the PA scale.<sup>2,20,28,29</sup> The mean values characterizing the group of

physiotherapists obtained by Pavlakis et al were significantly different from other studies, that is, 16.55 for EE, 5.20 for PA, and 39.50 for DEP.<sup>25</sup>

The respondents of this study were characterized by slightly lower PA and EE levels than in other studies, which may be related to the relatively short duration of employment of most subjects. For that reason, many young physiotherapists

TABLE 3. Results of 3-way ANOVA for Burnout Dimensions

	Variability source	Sum of SQUARES SS	Df	Mean Square	F	P
Emotional exhaustion	TOC	462.92	1	462.92	6.94	0.010
	EOC	733.73	1	733.73	11.00	0.0012
	AOC	1.12	1	1.12	0.02	0.897
	TOC* EOC	134.74	1	134.74	2.02	0.158
	TOC* AOC	49.01	1	49.01	0.74	0.393
	EOC* AOC	0.06	1	0.06	.001	0.976
	TOC* EOC* AOC	69.02	1	69.02	1.04	0.311
Depersonalization	TOC	315.25	1	315.25	12.55	<0.001
	EOC	321.86	1	321.86	12.81	<0.001
	AOC	4.05	1	4.05	0.16	0.689
	TOC* EOC	71.76	1	71.76	2.86	0.094
	TOC* AOC	62.20	1	62.20	2.48	0.118
	EOC* AOC	7.03	1	7.03	0.28	0.598
	TOC* EOC* AOC	6.38	1	6.38	0.25	0.615
Personal accomplishment	TOC	663.92	1	663.92	8.68	0.004
	EOC	493.80	1	493.80	6.46	0.012
	AOC	18.39	1	18.39	0.24	0.625
	TOC* EOC	43.62	1	43.62	0.57	0.452
	TOC* AOC	18.75	1	18.75	0.25	0.622
	EOC* AOC	2.46	1	2.46	0.03	0.858
	TOC* EOC* AOC	27.22	1	27.22	0.36	0.552

AOC=avoidance-oriented coping style, df=degrees of freedom, EOC=emotion-oriented coping style, F=ANOVA F test statistic, P=probability value, TOC=task-oriented coping style.  
 \*Represents the interaction of the variables.

may experience no long-term effects of occupational stress. However, studies show that both physiotherapists with a practicum shorter than 2 to 4 years and long-serving physiotherapists seem to experience particularly high rates of burnout<sup>28</sup> equivalent to those of intern or resident physicians<sup>30</sup> and student nurses.<sup>31</sup>

Taking into account the variability of the results and the confidence intervals presented in other studies, differences in the absolute values lose their importance.

A literature review concerning burnout severity assessment among physiotherapists indicates that it may vary in different countries. Research carried out in Spain indicates that only 4% of physiotherapists in that country demonstrate a high level of burnout,<sup>24</sup> whereas Italian researchers have shown that physical therapists in their country suffer from burnout more often than nurses, doctors, and technicians.<sup>1</sup> Austrian researchers have shown that 35% of physiotherapists have a high EE, 18% DEP, and 14% a reduced sense of PA.<sup>29</sup> This difference may be associated with the range of methodologies used and possibly, with the incompletely explained or non-uniform methods of calculating the raw results used by the individual authors. In our study, we calculated the prevalence rates based on one standard deviation above or below the mean, and which must be interpreted very carefully. We assume that the determined proportion is only at increased risk of burnout. Furthermore, Cherniss<sup>32</sup> describes burnout as a dynamic and complex process, which develops gradually. The first symptoms would include EE before DEP escalates, indicating that the full-syndrome would be indicated if 3 criteria were met.<sup>32</sup>

The severity of burnout in the analyzed group did not differ significantly from other health professions. Similar mean values of the syndrome scale measurements were observed in general practitioners, family doctors, and nurses.<sup>33–35</sup> Although other Polish studies have shown that physiotherapists manifest slightly fewer burnout symptoms than other medical professions,<sup>36</sup> this could be due to the use of a small sample size. In view of the high job demands, job stressors, and expectations of the patients and staff, our results seem to be justified.

The correlation analyses confirm the predictions concerning the positive effects of TOC and rather negative effect of EOC on assessment of the burnout symptoms. However, they did not confirm the expected positive correlation of AOC with the severity of burnout.

The literature lacks data concerning the correlations between coping styles and professional burnout in physiotherapists. In a study conducted among nurses, Fearon and Nicol<sup>37</sup> found a negative correlation between TOP and the severity of burnout. Additionally, they found that TOP is preferable under poor organizational conditions.

The results of ANOVA failed to confirm the key hypothesis concerning the interactive effects of coping styles, revealing only the main effects. In light of this, coping styles were found to be relatively independent of each other and did not demonstrate mutual interactions, which allow burnout level to be predicted. It can be stated that TOC is associated with a better professional adaptation of the physiotherapist, regardless of the configuration of the other coping styles: it seems important that the EOC neither strengthens nor weakens that correlation. We suspect that this is caused mainly by the lack the representativeness of the sample and its modest sample size. Our data consist of subjects who voluntarily participated and were not randomly selected in a nationwide survey. This should also be considered as a limitation.

Second, the examined subjects who differed in the profiles of coping styles (low vs high CISS scores) did not differ significantly with regard to the mean severity of burnout symptoms. Hence, employing a wider spectrum of coping styles did not correlate with better occupational adaptation by the physiotherapist. However, a limited spectrum of strategies (poor resourcefulness) was not found to be associated with more burnout symptoms.

A few characteristics of the sample, such as relatively low work experience and the higher proportion of females, limit the possibility to draw clear conclusions. Estimating the coping burnout interactions among psychiatrists would be more accurate if probability sampling was used, yet the present study reports merely the preliminary results. Additionally, the low magnitude of the effect revealed that the influence of the explanatory variables (coping styles) on the burnout syndrome is limited. Such results suggest that burnout is a more complex phenomenon, dependent also on other factors, and therefore cannot be simply correlated with the coping styles.

The major limitation typical for cross-sectional design may be temporal bias. The causal effect of coping style on burnout cannot be determined if the data are collected at 1 specific point in time. As coping style is generally a stable, dispositional trait<sup>38</sup> and burnout syndrome is a temporal state which may occur in specific situation, burnout may potentially be influenced by coping style. Although job exhaustion may affect the coping strategies, coping style, as one of the prevailing tendencies, is able to influence the development of certain dysfunctions.<sup>38</sup>

Response bias may occur on several occasions. In this study, the researchers aimed to minimize the risk of simulation and dissimulation. The respondents were anonymously interviewed and their results were collected directly by post. Second, the measurement tools were chosen carefully in terms of psychometric properties (reliability and validity). Additionally, making inference about the general population of physiotherapists should be avoided because of the weaknesses of self-report methods and psychological assessment.

This particular study has not analyzed physical activity as an individual category, which may be both a means of coping and protective behavior against burnout among physiotherapists. Exercise and sports contribute to achieving work-life balance, but they also might be a specific coping strategy: avoidance, emotional, or task-oriented depending on the context. AS it is both a mediating factor and diverse coping behavior, it would be problematic to determine its role in this study.

Personal resources such as optimism,<sup>39</sup> self-esteem,<sup>40</sup> a hardy personality,<sup>41,42</sup> sense of coherence,<sup>43</sup> and self-efficacy<sup>44</sup> have also been found to be linked to burnout. Alarcon et al<sup>45</sup> found that employee personality traits were related to EE, DEP, and PA. Garossa et al<sup>46</sup> confirmed that the locus of control and hardy personality particularly predicted the burnout level among nurses. Social support and active coping were also relevant predictors of burnout dimensions. Due to the relative stability of personality traits, each intervention is difficult and requires long-term impact, for example, by training the subjects to cope with stressful situations, developing resources and relaxation training. Such measures, however, may provide the individual with a buffer against burnout development.

We conclude that providing physical therapists with coping resources is important in their professional development, which has been confirmed by other studies<sup>47</sup> and may support existing preventive strategies (anti-burnout prophylaxis).

Application of that knowledge, perhaps via counseling or psychological training, may support the prevention of burnout.

## CONCLUSIONS

1. TOP, irrespective of the other coping styles employed, is associated with lower burnout indexes in the studied population sample.
2. There is no empirical evidence confirming the interactive association between the coping styles and burnout symptoms in the studied physiotherapists.
3. The scale of burnout in physiotherapists is significant, which confirms the reports published to date, and seems to be similar to the findings obtained for representatives of other medical professions.

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None.

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