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## Burnout in Portuguese physiotherapists, prevalence and influencing factors

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### Abstract

Psychological stress can be viewed as occurring when demands exceed an individual's adaptive capacity. Burnout is an occupational syndrome defined by three dimensions, emotional exhaustion, depersonalization and feelings of low personal accomplishment. Factors related to the nature of the physiotherapy practice, in which health care is provided to patients under painful experiences and chronic conditions, to aspects related to emotional fatigue brought by interpersonal exchanges or physical exhaustion due to staff shortage, within an increasingly demanding health care system, expose physiotherapists to a higher risk of burnout and few studies have examined burnout in this specific setting. Therefore, the aim of the present study was to assess the prevalence of burnout in Portuguese physiotherapists and to explore possible associations between burnout and demographic and work-related variables. Significant but weak association was found between age and emotional exhaustion, and between clinical experience and emotional exhaustion and global burnout score. Weak association was also found between the number of treated patients daily and daily working hours and physical fatigue and global burnout. Workload was associated with significantly higher scores of physical fatigue, cognitive weariness and global burnout. The prevalence of burnout was not high but significant differences were found in the prevalence of physical fatigue between the group with low workload and high workload. Emotional exhaustion was the most relevant predictor of the global burnout score. In conclusion, the results suggest that the prevalence of burnout in Portuguese physiotherapists is not very high, however, workload seems to place these professionals at a higher risk of developing burnout.

## 1. INTRODUCTION

Nowadays humans are often busy, pursuing more income, career development and personal satisfaction. Humans work for more than half of their life span and work builds the pillars of human existence. The relationships that people establish in the workplace and the difficulties that often arise when those relationships assume negative contours have been recognized as a significant aspect of human lives in the present time (Maslach, Schaufeli, & Leiter, 2001).

The term "burnout" appeared in the 1970s in the United States, mainly among human services workers (Maslach et al., 2001) and was coined by Freudenberger (1974). The

author used the term to characterize the exhaustion of individuals caused by excessive social and physical job demands. Burnout may be defined as a negative psychological reaction to chronic work stress exposure. Population-based studies have linked burnout to cardiovascular disease and also suggest that burnout is associated with significantly shorter life expectancy. Strong evidence has linked burnout in physicians to problematic alcohol use, broken relationships, depression and suicide (Shanafelt, Goh, & Sinsky, 2017).

Usually, the burnout syndrome is associated with three major dimensions: emotional exhaustion, depersonalization/cynicism and low perception of personal accomplishment (Freudenberger, 1974; Maslach, Jackson, Leiter, Schaufeli, & Schwab, 1986). These domains may be thought upon as a continuum starting with emotional exhaustion, i.e. perception of emotional stress and physical depletion. Subjects with emotional exhaustion feel indifferent about their work, no longer becoming invested in normal situations of a workday. As emotional exhaustion becomes more important, depersonalization and cynicism arise, with negative attitudes and detachment feelings towards work (Bridgeman, Bridgeman, & Barone, 2018). The relationship of inefficacy (reduced personal accomplishment) to the other two dimensions of burnout is somewhat more complex. In some instances, it appears to be a function of either exhaustion, cynicism, or a combination of the two. Moreover, a work situation with chronic, overwhelming demands that contribute to exhaustion or cynicism is likely to erode one's sense of effectiveness (Maslach et al., 2001).

Other authors consider that the core content of burnout is the depletion of the individuals' intrinsic energetic resources over time and is reflected primarily in emotional exhaustion, physical fatigue and cognitive weariness (Melamed, Shirom, Toker, Berliner, & Shapira, 2006; Shirom, 2003, 2009; Shirom, Nirel, & Vinokur, 2006). This line of thought considers exhaustion to have a central role in the process, and in fact exhaustion is a key dimension in all theoretical perspectives of burnout. Exhaustion is the most widely reported and analysed component of the syndrome and, although this approach is not consensual (Maslach, Leiter, & Schaufeli, 2008), emotional exhaustion has been reported as the most prominent burnout characteristic in studies enrolling health professionals in general (Bruschini, Carli, & Burla, 2018) and physiotherapists in particular (Wandling & Smith, 1997), highlighting the importance of this component.

Several methods are available in the literature for the evaluation of the Burnout syndrome, among them the Maslach Burnout Inventory (MBI), developed by Maslach et al. (1986), which analyses the three dimensions of Burnout: emotional exhaustion, depersonalization and reduced personal accomplishment. Subsequently, Maslach et al. (2001) modified the original definition of the latter two dimensions. The new version of the questionnaire (MBI-General Survey or MBI-GS), aiming to reach professions that are not so people-oriented, assesses the same three dimensions as the original measure, however using slightly revised items, in a broader way. Depersonalization was replaced by cynicism, referring to the same cluster of symptoms. Thus, the labels for the three components are: exhaustion, cynicism (a distant attitude towards the job) and reduced professional efficacy.

On the other hand, Pines and Aronson (1988) defined burnout as the state of physical, emotional and mental exhaustion caused by long-term involvement in emotionally demanding situations. This model is considered a one-dimensional measure yielding a single-composite burnout score. In this trend, the conceptualization of burnout that underlies the Shirom-Melamed Burnout Measure (Shirom, 2003) was inspired by the work of Maslach and colleagues (Maslach et al., 1986; Maslach et al., 2008; Maslach et al., 2001) and Pines and Aronson (1988), according to which Burnout represents a combination of physical fatigue, emotional exhaustion and cognitive weariness, the three forms of an individually possessed energy that, theoretically, are expected to be closely interrelated. According to Shirom (2003), those lacking a strong resource pool, including those with impoverished social support, are more likely to become burned-out or to go through cycles of resource loss when they cope with work-related stress. In addition,

people with depleted energetic resources who complain of physical fatigue, emotional exhaustion, and cognitive weariness, may appear to their significant others at work as less attractive and therefore, less likely to have access to social support.

Healthcare professionals, because of the stressful nature of their work, experience a wide range of physical and psychological symptoms, that may lead to pathophysiological consequences, namely musculoskeletal disorders, headaches, hypertension, gastritis, stomach ulcers, dizziness (Maslach et al., 2001), cardiovascular disease and shorter life expectancy (Ahola, Vaananen, Koskinen, Kouvonen, & Shirom, 2010; Shanafelt et al., 2017). As much as greater susceptibility to stress, anxiety, depression, burnout, alcohol abuse, insomnia, broken relationships and suicide (Oreskovich et al., 2015; Shanafelt et al., 2017; Spinelli, Wisener, & Khoury, 2019). All of these are negative consequences from chronic exposure to work-related stress (Bridgeman et al., 2018), that may lead to economic consequences, due to lack of productivity (Shanafelt et al., 2017).

Moreover, stress and burnout have been linked to increased medical errors, longer patient recovery times, patient dissatisfaction, all of which affects greatly the quality of patient care (Panagioti et al., 2017; Spinelli, Wisener, & Khoury, 2019). While unintentional medical errors have an impact on patients and their families, they may also contribute to adverse mental and emotional effects on the involved provider (Robertson & Long, 2018). A recent meta-analysis has demonstrated that, in healthcare providers, burnout has negative associations with perceived healthcare quality, patient satisfaction, quality indicators and perceptions of safety (Salyers et al., 2017).

Although the majority of the available studies focused on physicians and nurses, physiotherapists have demonstrated similar levels of the Burnout syndrome, mostly because of low professional autonomy, lack of organisation in the hierarchical command chain or career development, disorganisation in task distribution, work overload, limited time to attend patients and their families, excessive paperwork and low salary (Birgit, Catharina, & Ann, 2010; Sánchez et al., 2006; Santos, Barros, & Carolino, 2010). In fact, the physically demanding nature of the physiotherapy practice can be daunting, since it involves repetitive tasks, various manual techniques and awkward positioning during certain postures (Muaidi & Shanb, 2016).

Research has been published on the topic of burnout in physiotherapists, enrolling professionals from several locations in the world, such as Australia (Scutter & Goold, 1995), Cyprus (Pavlakis, Raftopoulos, & Theodorou, 2010), Japan (Ogiwara & Hayashi, 2002), Poland (Śliwiński et al., 2014), Portugal (Rodrigues, Valente, Faria, & Seixas, 2016), Spain (Gisbert, de Los Fayos, & Montesinos, 2008; González-Sánchez et al., 2017) and United States (Wandling & Smith, 1997). However, in Portugal, data is scarce and is provided by a small study (Rodrigues et al., 2016) and more studies are needed towards the understanding and management of burnout in Portuguese physiotherapists.

Therefore, this study aims to assess the prevalence of burnout in Portuguese physiotherapists and to explore whether any particular demographic and work-related factors are associated with an increased risk of burnout.

## 2. MATERIALS AND METHODS

### 2.1. Participants

To answer the research question, a cross-sectional study was planned. The study sample comprised physiotherapists working in 12 private clinics in the northern region of Portugal. After the approval from the Ethical Committee of the local University, participants were recruited using a convenience sampling method and all participants gave their written consent to participate in this study. The following inclusion criteria were adopted: being graduated in physiotherapy and working as physiotherapist, with direct contact with patients for at least 1 year.

## 2.2. Instruments

Data collection employed a two-part self-administered questionnaire, a custom-made questionnaire and the Shirom-Melamed Burnout Measure (SMBM). The custom-made questionnaire aimed to characterize the sample regarding gender, age, working experience, daily working hours and number of patients treated.

The SMBM was constructed based on the Conservation of Resources theory, as an alternative burnout instrument that focus on the assessment of exhaustion, i.e. the depleting of energetic resources, regardless of the occupational context (Shirom & Melamed, 2006). The authors conceptualized burnout as a multidimensional construct with three fundamental aspects: physical fatigue, emotional exhaustion and cognitive weariness. Physical fatigue refers to perceptions of tiredness and low levels of energy while performing workday tasks, emotional exhaustion refers to the perception of being too weak to display empathy to clients or coworkers, and cognitive weariness refers to the perception of slow thinking processes and reduced mental agility (Melamed et al., 2006; Shirom, 2003; Shirom et al., 2006).

The Portuguese version of the SMBM instrument was used in this study (Gomes, 2012). The instrument includes 14 items, distributed by three subscales and each item is assessed in a 7-point Likert scale (1 = never; 7 = always). The score is obtained by summing up the items of each subscale and then dividing the result by the number of corresponding items. Therefore, higher values mean higher levels of physical fatigue, emotional exhaustion and cognitive weariness. It is also possible to calculate a total score from the sum of the values in each subscale and then divided by three. Since there are no normative values available, a value of five, or higher, is an indicator of problems in a specific domain (Gomes, 2012).

## 2.3. Procedures

The target institutions were contacted and, after approval, 75 copies of the instruments were distributed. The participants had the opportunity to ask all the questions they considered relevant. The filled questionnaires were then collected by the same researcher. Of the 75 questionnaires, 71 (94.7%) were returned, a very high response rate.

## 2.4. Data analysis

Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 25.0 for Windows (SPSS Statistics, IBM, Chicago, IL, USA). Descriptive statistics were used to characterize the studied sample and the variables of interest. The Kolmogorov-Smirnoff test was used to assess the distribution of the studied variables, and since the variables did not follow a normal distribution pattern, non-parametric tests were selected.

A Spearman correlation coefficient was used to analyze the association between burnout scores and age, clinical experience, number of patients treated daily and number of daily working hours. A hierarchical cluster analysis was conducted to create groups based on the reported workload. Workload was objectively assessed using the daily working hours and daily number of patients treated. A two-cluster solution was achieved after an agglomerative approach, applying the between-groups linkage clustering method using squared Euclidean distance as measure. The independent samples Mann-Whitney U test was used to test if the cluster groups were different regarding the number of patients treated daily and the number of daily working hours and to compare the burnout scores between the two groups formed in the cluster analysis.

A receiver-operating characteristic (ROC) curve analysis was used to determine the best cut-off for the number of patients treated daily and the number of daily working hours on risk of burnout and area under the curve (AUC) was computed. For significant AUC, sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), positive likelihood ratio (LR+) and negative likelihood ratio (LR-) were determined using the best cut-off values. A multiple linear regression model was tested to analyze the

relative contribution of physical fatigue, cognitive weariness and emotional exhaustion to the global burnout score. Statistical significance was set at  $p \leq 0.05$ .

### 3. RESULTS

Seventy-one physiotherapists returned their questionnaires, 88.7% ( $n=63$ ) females and 11.3% ( $n=8$ ) males. This gender imbalance discouraged between gender analysis. The descriptive statistics (median and interquartile range) and the Spearman correlation coefficients between the assessed variables are presented in [Table 1](#).

Significant associations were found between the subscales of SMBM and the global burnout score ( $0.764 < \text{Spearman's } \rho < 0.904$ ). Cognitive weariness evidenced a very high positive correlation with the global burnout score and physical fatigue and emotional exhaustion evidenced high positive correlation with the global burnout score.

Emotional exhaustion evidenced a very weak association with age and a low positive association with clinical experience. Clinical experience was also weakly associated with the global score of burnout. The daily number of patients treated daily evidenced a low positive association with physical fatigue and global score of burnout. Finally, the number of daily working hours evidenced a very weak association with physical fatigue and with the global score of burnout.

**Table 1.** Correlation matrix and descriptive statistics for burnout, age and work-related variables.

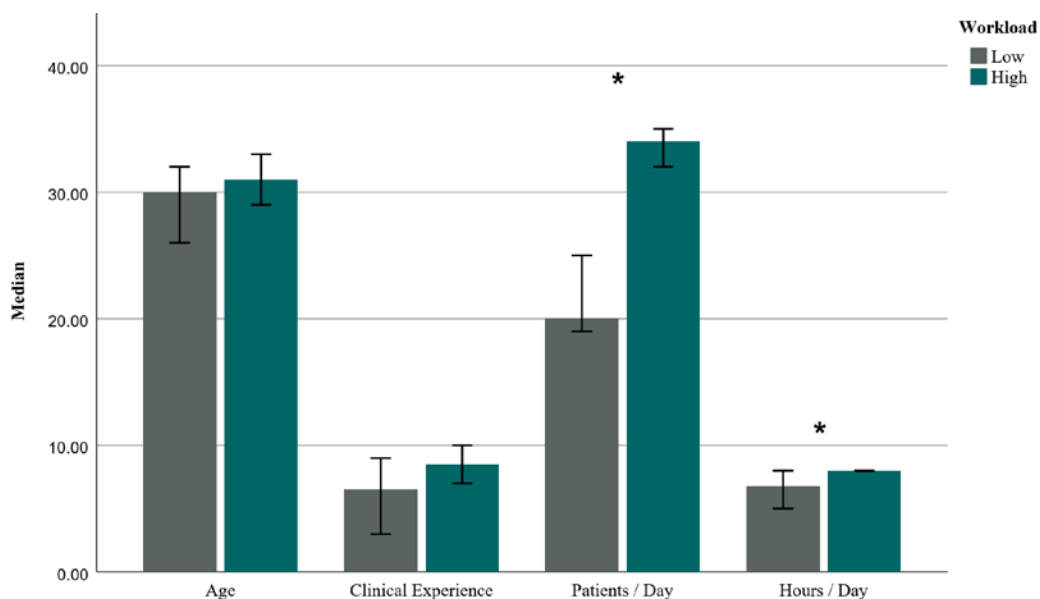
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1) Physical fatigue	-							
(2) Cognitive weariness	.665**	-						
(3) Emotional exhaustion	.441**	.631**	-					
(4) Burnout, global	.822**	.904**	.764**	-				
(5) Age (years)	.108	.077	.270*	.168	-			
(6) Clinical experience	.198	.146	.336**	.249*	.910**	-		
(7) Number of patients/day	.372**	.198	.192	.335**	.135	.156	-	
(8) Number of hours/day	.298**	.102	.134	.248**	.095	.169	.505**	-
Median	3.83	2.00	1.33	2.19	30.00	8.00	30.00	8.00
IQR	2.33	2.20	1.00	2.60	6.00	6.00	10.00	1.00

Note: IQR: interquartile range; \* $p < 0.05$ ; \*\* $p < 0.01$

The prevalence of burnout was 15.5% for the global burnout score, 19.7% for the physical fatigue domain, 12.7% for the cognitive weariness domain and 2.8% for the emotional exhaustion domain, when considering all the study participants. In the high workload group, the prevalence was 19.1% in global burnout score, 27.7% in physical fatigue, 14.9% in cognitive weariness and 4.3% in emotional exhaustion. In the low workload group, the prevalence was 8.3% in global burnout score, 4.2% in physical fatigue, 8.3% in cognitive weariness and 0% in emotional exhaustion.

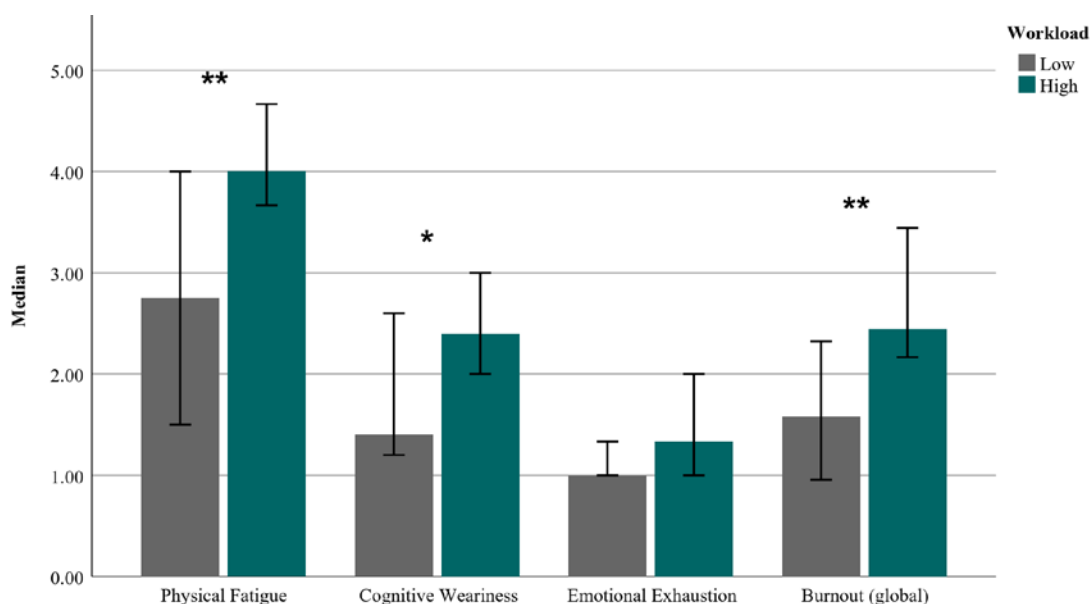
No significant differences were found for age ( $p = 0.07$ ) and clinical experience ( $p = 0.06$ ) when comparing the groups formed based on workload ([Figure 1](#)). However, significant differences were found regarding the number of patients treated/day ( $p < 0.001$ ) and regarding the amount of working hours/day ( $p < 0.001$ ).

Participants with higher workload reported a higher median number of patients treated/day (34 patients) and a higher median of daily working hours (8 hours), and participants with lower workload reported treating a lower median number of patients/day (20 patients) and a lower median of working hours/day (6.75 hours).



**Figure 1.** Between group comparison for age (years), clinical experience (years), number of treated patients daily (number of patients) and daily working hours (hours).

Considering burnout and its dimensions, participants with higher workload reported a median of 4.00 in physical fatigue, a median of 2.40 in cognitive weariness, a median of 1.33 in emotional exhaustion and a median of 2.44 in the global burnout score. Participants with lower workload reported a median of 2.75 in physical fatigue, a median of 1.40 in cognitive weariness, a median of 1.00 in emotional exhaustion and a median of 1.58 in the global burnout score. Significant differences were found between participants with high and low workload regarding physical fatigue ( $p = 0.003$ ), cognitive weariness ( $p = 0.048$ ) and global burnout score ( $p = 0.003$ ) (Figure 2).

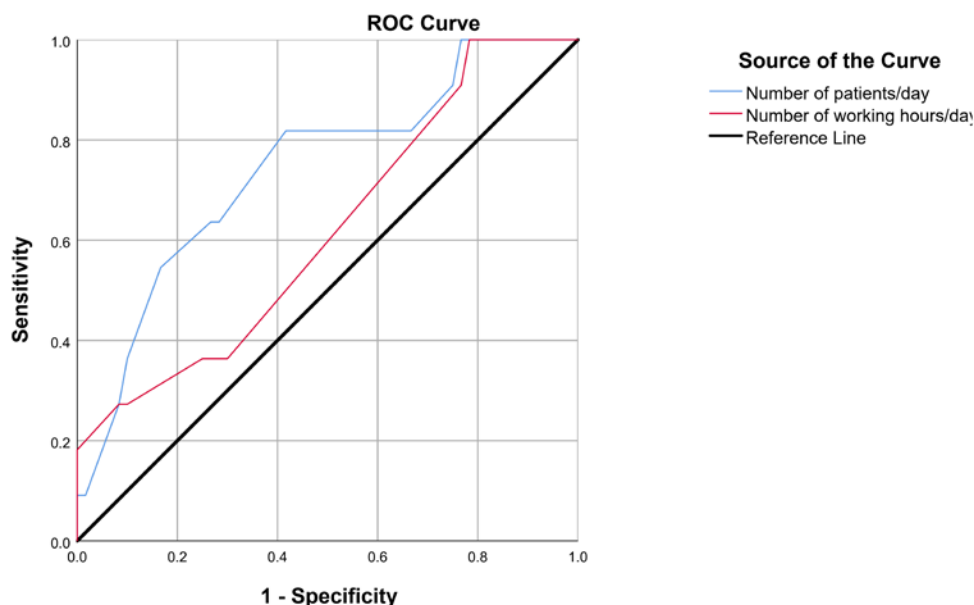


**Figure 2.** Between group comparison for the scores of physical fatigue, cognitive weariness, emotional exhaustion and global burnout.

The ROC curve (Figure 3) coordinates indicated that the best cut-off of daily number of patients treated was 31 patients and the best cut-off of daily working hours was 6.75 hours. The AUC for the number of patients treated daily was 0.742 (95% CI: 0.580 to 0.903;  $p = 0.011$ ) and the AUC for the daily working hours was 0.619 (95% CI: 0.439 to 0.799;  $p = 0.092$ ).

Since the AUC was significant for the number of patients treated daily, sensitivity (81.82%; 95% CI: 59.02% to 104.61%), specificity (58.33%; 95% CI: 45.86% to 70.81%), PPV (26.47%; 95% CI: 11.64% to 41.30%), NPV (94.59%; 95% CI: 87.31% to 101.88%), LR+ (1.96; 95% CI: 1.30 to 2.96) and LR- (0.31; 95% CI: 0.09 to 1.11) were determined using the cut-off value of 31 patients.

A significant regression equation was found ( $F_{(3, 67)} = 524.1, p < 0.001$ ), with an  $R^2$  of 0.959. Participants global burnout score is equal to  $-1.599 + 0.299$  (Physical Fatigue) +  $0.558$  (Cognitive Weariness) +  $1.187$  (Emotional Exhaustion). The global burnout score increased 0.299 points for each point in physical fatigue, 0.558 points for each point in cognitive weariness and 1.187 points for each point in emotional exhaustion. Physical fatigue, cognitive weariness and emotional exhaustion were significant predictors of the global burnout score and emotional exhaustion was the main predictor.



**Figure 3.** ROC curve for daily number of patients treated and daily working hours in predicting Burnout.

#### 4. DISCUSSION

The prevalence of burnout among Portuguese physiotherapists was not very high, 15.5% for the global burnout score, 19.7% for the physical fatigue domain, 12.7% for the cognitive weariness domain and only 2.8% for the emotional exhaustion domain. Although not very high, these prevalence values indicate that these professionals are at risk and attention should be paid to the variables related to the phenomenon, especially workload, since physiotherapists with high workload evidenced higher prevalence values in all scores, 19.1% in global burnout score, 27.7% in physical fatigue, 14.9% in cognitive weariness and 4.3% in emotional exhaustion.

The results of this study are in line with previous research stating that the prevalence of burnout in Portuguese physiotherapists was not high (Rodrigues et al., 2016). However, the prevalence of emotional exhaustion in that study was 31%, a much higher value than the 2.8% reported in the current study. These differences may be explained by the fact that a different instrument was used to assess the domain and by the fact that the sample in the study of Rodrigues and colleagues (Rodrigues et al., 2016) had different characteristics regarding age, professional experience and size. However, the proportion of females was much higher in our study and females have been associated with higher levels of emotional exhaustion than males (Montero-Marín et al., 2011), therefore, higher levels of emotional exhaustion were expected.

In other studies, addressing the thematic of burnout in physiotherapists, the reported prevalence for burnout is variable. Gisbert et al. (2008) reported that only 4% of the surveyed Spanish physiotherapists reported burnout. Bruschini et al. (2018) have

reported that 15.7% of the surveyed Italian physiotherapists are at high risk of developing burnout, Śliwiński et al. (2014) reported that 22.5% of the surveyed Polish physiotherapists evidenced high levels of burnout and Schuster, Nelson, and Quisling (1984), reported a prevalence of burnout of 53% in American physiotherapists.

Moreover, emotional exhaustion was the burnout domain consistently reported as the most prominent in physiotherapists (Scutter & Goold, 1995), but not in the present study, which reported physical fatigue as the most affected burnout domain, followed by cognitive weariness. Interestingly, cognitive weariness was strongly associated with the global burnout score, more than any of the other domains. However, the linear regression model identified emotional exhaustion as the strongest predictor of the total burnout score. The authors listed some factors that the respondents linked to the physiotherapy practice namely being a stressful occupation (running a business, interacting with difficult clients, dealing with unrealistic expectations, being alone when making decisions, a feeling of having too much to do, being responsible for another person's wellbeing, lack of feedback on performance, difficulty finding permanent work and having a heavy workload), however, no significant association was found between demographic, work characteristics and burnout levels. The distinct cultural background of the physiotherapists enrolled may help explain these differences. Moreover, in the present study, only private practice physiotherapists were enrolled and in the study of Scutter and Goold (1995) most respondents worked in the public sector, despite many accumulating with private setting work.

In Poland, there are nearly 20000 physiotherapists and in a study of 151 physiotherapists, with at least 3 years of experience, the authors have described that 62% of the sampled physiotherapists have accumulated additional work due to dissatisfaction with salary (Pustułka-Piwnik, Ryn, Krzywoszański, & Stożek, 2014). Among these physiotherapists there were increased emotional exhaustion and decreased sense of personal achievement. Emotional exhaustion was significantly higher among physical therapists working with adults and employed in hospitals, depersonalization was higher among men, hospital workers and employees with seniority from 15 to 19 years, personal accomplishment was decreased among men and less-educated therapists. In the described case, the indicators of burnout in physiotherapists were significantly associated with selected demographic and organizational variables.

In the present study, age was weakly associated with emotional exhaustion but not with the global score of burnout. This is partially in line with the literature that often reports no association between burnout and age (González-Sánchez et al., 2017; Pustułka-Piwnik et al., 2014). However, other studies, although not testing directly the association between age and burnout, report that burnout prevalence is higher in physiotherapists aged 46-62 years and lower in physiotherapists aged 21-35 years (Gisbert et al., 2008).

Clinical experience evidenced a weak positive association with the global score of burnout and a low positive association with emotional exhaustion. This trend is the opposite of what has been reported in the literature. Śliwiński et al. (2014) reported that physiotherapists with 5-15 years of service are prone to experience burnout with age but not on the other length of service categories, and Schlenz, Guthrie, and Dudgeon (1995) stated that emotional exhaustion scores have a significant inverse relationship with years of experience at the present job. Wandling and Smith (1997) also suggest that burnout is lower in physiotherapists working for more than 16 years. Ogiwara and Hayashi (2002), surveyed 243 Japanese physiotherapists, from Ishikawa Prefecture, and found that the years of experience, the clinical competency and the ability to empathize with clients can aid to lessen the possibility of burnout.

In the present study the prevalence of physical fatigue was moderate. This domain is assessed by the SMBM but not by the instruments used to assess burnout in the cited studies. In our sample, physical fatigue was the most prominent burnout domain and it was showed that workload is associated with burnout. Therefore, greatest exposition to higher levels of workload and physical fatigue are responsible by the association between clinical experience and burnout.



Physical fatigue, cognitive weariness and global burnout scores were higher in physiotherapists with higher workload. This is reinforced by the significant association between daily working hours, number of patients treated, physical fatigue and global burnout scores. This is in line with previous studies that also found higher burnout in physiotherapists working more than 40 hours per week directly with patients and in those treating more than 20 patients per day (González-Sánchez et al., 2017).

In fact, when independently considering the daily working hours and the daily number of patients treated, the ROC curve analysis revealed that for daily working hours the AUC was not significant, contrarily to the AUC for the number of patients treated daily. The ROC curve suggested 31 patients treated daily as the most appropriate cutoff value. However, although the AUC was significant and, the sensitivity, NPV and LR+ values were acceptable, overall it is not possible to state that the number of patients treated daily alone may be a good indicator of burnout risk. Nevertheless, considering the relatively small sample size, more studies are needed to confirm or refute these findings.

A study conducted in a sample of 172 Cyprus physiotherapists found that almost half the participants believed their job was stressful (Pavlakis et al., 2010). High burnout scores are more likely in association with certain variables such as low salary, employment sector, age group and job-related stress. Gender is also a variable that reportedly may be related to burnout levels (Rodrigues et al., 2016), with male physiotherapists demonstrating higher professional efficacy. These variables, however, were not assessed in this study.

This study has some limitations, namely the small sample size and the imbalance between males and female participants that limited the data analysis. Another limitation is the fact that the coping strategies employed by the physiotherapists to deal with physical, cognitive and emotional strain have not been addressed. Moreover, the existence of mental disorders or other psychological problems was not assessed with proper assessment instruments, which could have influenced the results of the study.

## 5. CONCLUSIONS

The prevalence of physical fatigue, cognitive weariness, emotional exhaustion and global burnout in Portuguese physiotherapists was 19.7%, 12.7%, 2.8% and 15.5%, respectively. These professionals are involved in attaining the patient goals, living their successes and their failures. Hence, the physical, cognitive and emotional load is high. Workload plays a key role in the process and health care managers should focus on prevention and early detection to help professionals improve their resilience. Emotional exhaustion seems to be the most prominent predictor of the global burnout score. More studies are needed on this topic and should investigate the strategies adopted by health professionals in general, and physiotherapists in particular, to cope with burnout.

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