

# Burnout syndrome and coping strategies in Portuguese oncology health care providers

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## Abstract

**Background:** Burnout is a multidimensional syndrome and includes symptoms of emotional exhaustion, depersonalization, and reduced personal accomplishment at work. Oncology health care providers are at high risk to develop symptoms of burnout because of work-related stressors. Adaptive coping strategies adopted to deal with stressors may prevent the development of burnout. **Objective:** The present study aims to assess the association between burnout, functional coping strategies, and occupational factors in a sample of oncology providers, mostly nurses. **Methods:** Sociodemographic Questionnaire, the Maslach Burnout Inventory, and the Problem Solving Inventory “*Inventário de Resolução de Problemas*” were administered. Descriptive, correlational, and linear regression analyses were performed. **Results:** The study showed that emotional exhaustion correlated with lower levels of adaptive coping, less years of experience in Oncology, and a greater amount of hours worked per week. Personal accomplishment was associated with the adaptive coping strategies. No further statistically significant associations were identified. **Discussion:** Our findings support the importance of adaptive coping strategies in order to prevent symptoms of burnout when health professionals face potentially stressful occupational factors. Training aimed at improving adaptive coping skills may prevent burnout syndrome for health care professionals working in Oncology.

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**Keywords:** Burnout, oncology, health professionals, coping strategies.

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## Introduction

Health professionals, particularly nurses, working in oncology are at high risk for burnout, a complex phenomenon initially identified in parole officers working in community treatment programs<sup>1-3</sup>. Care providers dealing with situations beyond their skills, power, and energy may develop burnout syndrome<sup>2,4</sup>. Several definitions of burnout have been produced over the last 30 years, all depicting a general state of fatigue and frustration, feelings of emptiness and personal failure, and an inability to work<sup>5-8</sup>. Burnout was operationalized as composed by three dimensions: Emotional Exhaustion; Dehumanization; and Reduced Personal Accomplishment. Emotional Exhaustion involves a sense of emotional and physical fatigue as well as lack of energy required to carry out professional activities. Dehumanization represents emotionally distant attitudes and actions toward colleagues and patients. Reduced Personal Accomplishment depicts feelings of personal dissatisfaction and loss of professional fulfillment.

Among the several factors promoting burnout, chronic occupational stress (e.g., night shifts, patient pressure, and work overload) coupled with poor coping strategies may be the most defining<sup>9-11</sup>. Considering this risk factor, an exceptional number of health professionals show symptoms of burnout, specifically those who work with patients suffering from chronic diseases and cancer<sup>3,12-17</sup>. For many of these health professionals, interactions with oncology patients heightens an intense fear of death and uncertainty about the future, perpetuating stress and increasingly likelihood of burnout<sup>18-21</sup>. Occupational-related factors such as insufficient personal, vacation time, and problems concerning care management are also associated with burnout symptoms<sup>11,22,23</sup>. Burnout negatively affects health professionals' wellbeing and work performance

including job withdrawal, absenteeism, quality of care provided to patients, and increased number of medical errors<sup>24-26</sup>.

The ways health professionals face work-related stressors largely determines the development of burnout<sup>10,27</sup>. Two general categories of coping may be identified: adaptive and maladaptive<sup>28-30</sup>. Adaptive strategies, such as reappraisal, are proactive, as they involve challenging the problem with direct changes in behavior. Alternatively, maladaptive strategies, such as avoidance and denial, may alleviate stress temporarily without elimination or modification of the source<sup>31,32</sup>. Moreover, coping strategies play an important role in determining the resulting levels of burnout. Burnout levels are higher among individuals who adopt maladaptive coping compared to those who enact adaptive coping strategies<sup>13</sup>.

The aims of the current study were: (1) to explore the association of burnout's dimensions (i.e. Emotional Exhaustion, Dehumanization, and Personal Accomplishment) with functional coping strategies; and (2) to explore the association between burnout and occupational-related variables, in a sample of oncology health care providers. Overall, we hypothesized to find high scores on burnout dimensions correlated (aim#1) with low levels of adaptive coping strategies and (aim#2) greater amount of hours worked per week, and less work-related experience in Oncology.

## Methods

### Participants and procedures

Participants were health care professionals (N = 46) recruited in four Portugal Multipurpose Hospital Day Oncology Units: *Hospital São João* (n = 28), *Hospital Geral Santo António* (n = 9), *Hospital de Faro*

(n = 5) and Hospital de Beja (n = 4). Participants were included if they had history of working in the outpatient Oncology clinic for at least one year and signed the informed consent. Participants were recruited using a convenience sampling method.

**Instruments**

The sociodemographic questionnaire administered included gender, age, marital status and occupation-related variables (years of work in oncology, hours worked per week). Burnout was assessed using the Portuguese version of the Maslach Burnout Inventory<sup>5,33</sup>. The Maslach Burnout Inventory is a 22-item instrument assessing personal feelings and attitudes of the professional in relation to their work. The three dimensions assessed include: Emotional Exhaustion which assesses the feelings of the subject in relation to the emotional state caused by the work (9 items); Dehumanization which describes what may be a cold and impersonal response of the individual towards their patients (5 items); and Personal Accomplishment which evaluates feelings of competence and professional effectiveness in carrying out their work (8 items). Each item is rated on a 7-point Likert – type scale ranging from 0 (never) to 6 (everyday). Higher levels of burnout are indicated by higher scores on Emotional Exhaustion and Dehumanization, and lower score on Personal Accomplishment. Cronbach's alpha coefficients indicated good internal consistency for the sub-scales Emotional Exhaustion and Personal Accomplishment, alpha 0.85 and 0.80, respectively. Internal consistency of Dehumanization was low yet acceptable, alpha 0.67.

Coping strategies were assessed by Problem-Solving Inventory “Inventário de Resolução de Problemas”<sup>34</sup>, a 40-item questionnaire assessing 9 coping strategies. These strategies include: ‘request for help’, ‘confrontation and active problem solving’, ‘emotional abandonment in the face of the situation’, ‘internal = external locus of control’, ‘emotional control strategies’, ‘active attitude in not allowing incidents interfere with daily living’, ‘internalized = externalized aggression’, ‘self-responsibility and fear of the consequences’, and ‘facing the problem and planning strategies’. The score of the sub-scales measuring maladaptive coping were reversed, so that the total score reflects the overall levels of adaptive coping strategies. The Brazilian Portuguese version of Maslach Burnout Inventory’s cut-off scores was adopted<sup>35</sup>: Emotional Exhaustion was considered high if ≥ 26; Dehumanization score equal to or greater than 9 was considered high; and a Personal Accomplishment score equal to or lower than ≤ 33 corresponded to diminished Personal Accomplishment. Although results were primarily analyzed using the Brazilian Portuguese Maslach Burnout Inventory cut-off scores, results were also compared to the cut-off scores utilized in the United States<sup>5</sup>. High levels of burnout corresponded to Emotional Exhaustion scores ≥ 21; Dehumanization scores ≥ 8; and Personal Accomplishment scores ≤ 28<sup>5</sup>. The scale had good internal consistency, as indicated by Cronbach's alpha 0.85.

**Data analysis**

Descriptive analysis was conducted using SPSS version 23 (IBM, 2015). Descriptive statistics included the mean and the standard deviation (SD) for continuous variables (e.g., age), and frequencies for nominal variables (e.g., gender). Shapiro-Wilk test was used to assess variables’ distribution. Cronbach's alpha was used to evaluate the internal consistency of the Maslach Burnout Inventory sub-scales and Problem Solving Inventory. Spearman's rho coefficient and Spearman correlation test were used to identify and test the variables’ correlation. Linear regression was conducted using Mplus 7.3<sup>36</sup>. Maximum likelihood estimation with robust standard errors was used since it demonstrated to be robust against departure from the normal distribution<sup>37</sup>. Statistical analyses were performed using SPSS version 23 and Mplus 7.3 software. The significance level was set at 0.05.

**Results**

**Sample characteristics**

The sample consisted of 46 health care professionals, of whom 37 were nurses (80.4%) and 9 doctors, with greater representation of females (n = 42, 91.3%) compared to males (n = 4, 8.7%). The majority was married (n = 36, 78.26%; single n = 8, 17.39%, and divorced n = 2, 4.35%). Participant mean age was 40.13 years (SD = 9.79); mean number of years working in health care settings was 16.78 (SD = 9.30); mean number of years working in oncology was 8.62 (SD = 6.72). Hours of work per week: 35 hours/week (n = 28, 60.87%), 40 hour/week (n = 13, 28.26%), more than 40 hour/week (n = 5, 10.87%). Participants’ mean scores on Maslach Burnout Inventory sub-scales were: Emotional Exhaustion = 20.89 (SD = 9.95); Dehumanization = 3.28 (SD = 4.28); and Personal Accomplishment = 37.11 (SD = 7.78) (Table 1).

**Table 1.** General description of the sample

		Overall sample (N = 46)
Sex (%)	Female	42 (91.3)
	Male	4 (8.7)
Age, mean (SD)		40.13 (9.79)
Marital status (%)	Single	8 (17.39)
	Married	36 (78.26)
	Divorced	2 (4.35)
Years of work in health settings, mean (SD)		16.78 (9.30)
Years of work in oncology mean (SD)		8.62 (6.72)
Hours of work (%)	35 hours/week	28 (60.87)
	40 hour/week	13 (28.26)
	more than 40 hour/week	5 (10.87)
MBI sub-scales, mean (SD)	EE	20.89 (9.95)
	D	03.28 (4.28)
	PA	37.11 (97.78)
IRP, mean (SD)		153.89 (14.45)

Categorical variables are described by absolute (relative) frequencies of the classes. Continuous variables are described by the mean (standard deviation). EE: emotional exhaustion. D: depersonalization. PA: personal accomplishment. IRP: problem solving inventory. MBI: Maslach burnout inventory.

Adopting the Brazilian cut-offs of the Maslach Burnout Inventory<sup>38</sup>, participants revealed low Emotional Exhaustion, low Dehumanization, and high Personal Accomplishment. When the US based cut-offs<sup>5</sup> were used, our sample showed moderate levels of Emotional Exhaustion and Dehumanization, and high levels of Personal Accomplishment.

The Maslach Burnout Inventory dimensions’ mean scores were comparable to previous studies conducted in similar contexts, except for the levels of Dehumanization that were higher among physicians in Horta’s<sup>39</sup> study (Table 2). The mean of the overall score of the Problem Solving Inventory was 153.89 (SD = 14.45; Table 1). The average was higher compared to the study by Carvalho<sup>40</sup>, (Mean = 149, SD = 12.13).

**Table 2.** Comparison of burnout dimensions score with other studies

	N	EE	D	PA
		Mean (SD)	Mean (SD)	Mean (SD)
Horta, 2005 <sup>2</sup>	72	20.00 (9.66)	6.90 (4.91)	39.20 (5.27)
Silva, 2008 <sup>1</sup>	46	17.81 (9.84)	2.81 (3.27)	40.12 (5.46)
Current study <sup>3</sup>	46	20.89 (9.95)	3.28 (4.28)	37.11 (7.78)

<sup>1</sup> Portuguese nurses; <sup>2</sup> Portuguese medical doctors; <sup>3</sup> Portuguese medical doctors and nurses; EE: emotional exhaustion; D: depersonalization; PA: personal accomplishment.

## Burnout dimensions, coping strategies, and occupational characteristics

Preliminary analyses of the associations between the independent variables were performed to test for collinearity. The results (Table 3) illustrate the presence of high collinearity between three variables: age, years of profession, and years of work in oncology. Therefore, and due to the sample size, only the variable “years of work in oncology” was included in the regression models. The spearman correlations between the dependent and the independent variables were also considered. Most of the correlation coefficients were statistically non-significant although of magnitude greater than 0.20. We hypothesize this to be caused by the small size of the sample. Only coefficients greater than .30 resulted in statistically significant values.

Overall, the Maslach Burnout Inventory sub-scales were inter-correlated, only Emotional Exhaustion and Dehumanization were not significantly associated. High score on Problem Solving Inventory was reported by health professionals essentially with low levels of Emotional Exhaustion and with high levels of Personal Accomplishment. Greater levels of Problem Solving Inventory were reported by health professionals with older age and with more years of work experience, but were not associated with years of work in oncology.

## Linear regression models

Table 4 reports the results of the 3 linear regressions performed. Lower Emotional Exhaustion was significantly associated with more years of experience in oncology, and with greater levels of coping strategies measured by Problem Solving Inventory. A significantly positive association between Emotional Exhaustion and the number of hours of work per week was also identified. The dimension Dehumanization was not significantly associated with any of the independent variables included in the model. Greater levels of Personal Accomplishment were only significantly associated with greater level of coping strategies measured by Problem Solving Inventory (Table 4).

## Discussion

The current study investigates the association between burnout, coping strategies, and occupational factors (e.g., years of work in health care settings, hours worked per week) in a Portuguese sample of health care professionals. The 46 participants recruited in four Portuguese hospitals are predominantly nurses, a work category at a greater risk to develop burnout due to their close involvement in the care of patients<sup>2,3,17</sup>. Participants have low emotional exhaustion, low depersonalization, and high personal accomplishment, according to the Brazilian cut-offs of the Maslach Burnout Inventory<sup>38</sup>. Whereas, based on the US cut-offs<sup>5</sup>, our sample shows moderate levels of emotional exhaustion and depersonalization, and high

levels of personal achievement. This discrepancy demonstrates the importance of the cultural background in determining and interpreting the levels of burnout symptoms. The lack cut-offs based on Portuguese samples may represent a limitation to the study. The cut-offs identified in different cultural and working contexts, should be used and interpreted with caution and skepticism<sup>41</sup>. Therefore, we decided to use the Maslach Burnout Inventory sub-sales raw score in our analysis. The mean scores on the burnout inventory<sup>5</sup> are comparable to the mean scores obtained in studies conducted in Portugal on samples of physician and nurses<sup>39,42</sup>. Though, physicians in Silva's study<sup>42</sup> have slightly higher levels of depersonalization compared to nurses in our and Horta's study<sup>39</sup>.

The results of the linear regression analysis suggest that Portuguese health professionals who have high levels of emotional exhaustion are characterized with low levels of functional coping, less years of experience in Oncology care, and report a greater amount of hours worked per week. Emotional exhaustion may occur as a consequence of poor adaptive strategies of coping enacted to deal with work-related stressors. Health care professionals with less work experience in Oncology show high levels of emotional exhaustion. We hypothesized that work experience may help health professionals developing functional coping strategies to deal with work-related stressors. This is supported by the association between functional coping and the years of work in Oncology clinics. In addition, work experience in such settings may change health professionals' perception and attitudes towards their job<sup>43</sup>. For instance, as age progresses the health professionals might improve their confidence in work tasks, which reduces their vulnerability to work-related stressors<sup>13,44</sup>. Lastly, the amount of hours worked per week is an important stressor that health professionals have to deal with<sup>45</sup>.

Participants with high levels of personal accomplishment are characterized with high levels of adaptive coping, whereas, depersonalization does not correlate with coping and occupational factors. Overall, the results of our study support the importance of the adoption of functional coping strategies in order to prevent symptoms of burnout<sup>46,47</sup>. Structural adjustment including reducing hours worked per week might limit the risk of developing symptoms of burnout. Training aimed at improving coping skills to deal with work-related stress may prevent burnout syndrome in health professionals<sup>48,49</sup>.

**Table 4.** Standardized regression coefficients of the regression model of each burnout dimension (EE, D, PA) with years of work in oncology, hours per week and IRP

	EE	D	PA
Years of work in oncology	-0.26*	-0.07	-0.05
Hours per week	0.32**	0.11	0.18
IRP	-0.34**	-0.03	0.38*

\* p < 0.05; \*\* p < 0.01. EE: emotional exhaustion; D: depersonalization; PA: personal accomplishment; IRP: “Inventário de Resolução de Problemas” (Problem Solving Inventory).

**Table 3.** Spearman correlation coefficients between burnout dimensions, IRP, age, years of profession, years of work in oncology and hours of work per week

	1	2	3	4	5	6	7
1) Age							
2) Years of profession	.97***						
3) Years of work in oncology	.70***	0.71***					
4) Hours per week	-0.18	-0.21	0.20				
5) EE	-0.26	-0.23	-0.22	0.23			
6) D	0.06	0.06	-0.04	0.08	0.20		
7) PA	-0.10	0.12	0.02	0.16	-0.36*	-0.46***	
8) IRP	0.21*	0.21*	0.08	-0.05	-0.43***	-0.06	0.39**

\* p < 0.05; \*\* p < 0.01, \*\*\* p < 0.001, for the Spearman correlation test. EE: emotional exhaustion; D: depersonalization; PA: personal accomplishment; IRP: “Inventário de Resolução de Problemas” (Problem Solving Inventory).

## Conclusions

Further investigation with probabilistic samples will be necessary to better understand the role of coping strategies in determining the levels of burnout in oncology. Interventions aimed to improve individuals' adaptive coping skills should be tested longitudinally on a larger sample of health professionals.

## Limitations and future directions

Our study presents methodological limitations. The small sample size, predominantly composed by female nurses, and the use of non-probabilistic sampling method are the main limitations. Therefore, we consider our findings preliminary.

## Competing interests

The authors declare no competing interests.

## Ethical approval

This study was approved by the institutional review boards at *Hospital São João do Porto*, *Hospital Geral Santo António*, *Hospital de Faro*, *Hospital de Beja*.

## Author's contributions

VFJC worked to develop the research and data collection protocol, data collection, cleaning, database management, data analysis, and draft the first manuscript. AJPP worked to develop the research and bibliography revision. MFE worked in the study design, bibliography revision, and statistical analysis. ARPG worked in study design and statistical analysis. ANP, JDJM, MW worked in bibliography revision, statistical analysis, and helped to draft the manuscript. All authors provided creative input on the final manuscript version and approved it for publication.

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