

# Burnout and job satisfaction among emergency and intensive care providers in a public hospital

Esgotamento profissional e satisfação no trabalho em trabalhadores do setor de emergência e terapia intensiva em hospital público

Luiz Junior Rocha<sup>1</sup>, Maria da Conceição Juste Werneck Cortes<sup>2</sup> , Elizabeth Costa Dias<sup>2</sup> , Filipa de Meira Fernandes<sup>2</sup> , Eliane Dias Gontijo<sup>2</sup> 

**ABSTRACT | Background:** New technologies and inadequate management of work might have negative impact on the mental health of workers. **Objective:** To investigate factors associated with the prevalence of burnout and levels of job satisfaction among emergency department and intensive care providers in a large public hospital. **Methods:** Cross-sectional study with 91 healthcare workers, who were administered the self-report questionnaires Maslach Burnout Inventory – Human Services Survey (MBI-HSS) and Job Satisfaction Scale (JSS20/23). **Results:** The sample was predominantly composed of women (58.2%), married workers or with a stable partner (52.8%), having attended graduate studies (75.8%) and with average age 37 years old. Twenty-five percent of the participants exhibited emotional exhaustion and dissatisfaction with the work environment and hierarchical relationships, and 66% had already thought of leaving the profession. Allocation to intensive care unit, lack of professional growth opportunities, dissatisfaction with hierarchical relationships, nursing profession, and having thought of leaving the profession explained 55% of the prevalence of emotional exhaustion. **Conclusion:** Positive correlation between emotional exhaustion and job dissatisfaction was the earliest identifiable indicator of burnout. Periodic evaluations for early detection and prevention are important to reduce occupational disorders, and consequently improve the quality and safety of care delivery.

**Keywords |** burnout, psychological; hospitals, public; patient care team; burnout, professional.

**RESUMO | Introdução:** A incorporação tecnológica e a gestão inadequada do trabalho podem impactar negativamente a saúde mental dos trabalhadores. **Objetivos:** Estimar fatores associados à prevalência de síndrome de Burnout (SB) e satisfação no trabalho (ST) de equipes da sala de emergência e do centro de tratamento intensivo (CTI) de hospital público de grande porte. **Método:** Estudo transversal com 91 profissionais de saúde, utilizando questionários autoaplicáveis, o Maslach Burnout Inventory – Human Services Survey (MBI-HSS) para identificação da SB e o Job Satisfaction Scale (JSS20/23) para avaliação da ST. **Resultados:** Entre os participantes houve predomínio de mulheres (58,2%), casados/união estável (52,8%), com pós-graduação (75,8%) e idade média de 37 anos. Verificou-se que 25% apresentaram exaustão emocional, insatisfação com o ambiente de trabalho e com a relação hierárquica e 66% já tiveram pensamento de abandonar a profissão. As variáveis: trabalhar em CTI, falta de oportunidade de crescimento profissional, insatisfação com a relação hierárquica, categoria profissional de enfermagem e pensamento prévio de abandonar a profissão foram significativas e explicam até 55% da exaustão emocional entre os trabalhadores. **Conclusões:** A associação positiva entre exaustão emocional e insatisfação com o trabalho mostrou-se como o primeiro marcador identificável da SB. Avaliações periódicas para identificação precoce e prevenção do adoecimento laboral são importantes na redução do sofrimento do profissional e consequente melhoria da qualidade e segurança do cuidado prestado.

**Palavras-chave |** burnout; hospitais públicos; equipe de saúde; esgotamento profissional; exaustão profissional.

<sup>1</sup>Emergency and Urgent Care Department, Odilon Behrens Municipal Hospital – Belo Horizonte (MG), Brazil.

<sup>2</sup>Department of Preventive and Social Medicine, Universidade Federal de Minas Gerais – Belo Horizonte (MG), Brazil.

DOI: 10.5327/Z1679443520190404

## INTRODUCTION

Precarious work, high productivity and efficiency demands, conflicting hierarchical interpersonal relationships, and inadequate working conditions might have negative impact on the mental health of workers. In addition, lack of solidarity among coworkers contributes to cause physical, mental and emotional exhaustion, which might result in distress and illness, with direct implications for the quality of services<sup>1-5</sup>.

Within this context, job burnout variably manifests as depression, high blood pressure, sleep disorders, headache, impaired efficiency at work, reduced motivation, and dysfunctional behavior in the workplace. In addition to organizational demands for productivity and efficiency, work in health care might also cause distress and emotional disorders for inherently involving interpersonal relationships, especially within the hospital setting<sup>6-10</sup>.

While stress is intrinsically related to work and can be positive in terms of motivation, urgent care providers might develop burnout when they feel unable to invest in or cope with their job<sup>11</sup>. Selligman-Silva observes that particular environments might behave as sources of tension, as, for instance, intensive care units (ICU) and emergency departments (ED)<sup>1</sup>.

Eblin and Carlotto describe work overload, high competitiveness, continuously facing death, and interpersonal conflicts as factors which predispose to burnout<sup>7</sup>. Also age, previous experience, and ability to handle adverse situations have been mentioned within this context<sup>8</sup>.

A relationship between productivity, job satisfaction and burnout has been reported<sup>11-17</sup>. A meta-analysis of 11 cross-sectional studies found that stress and negative emotions contribute to cause exhaustion, while positive feelings and sociability promote personal accomplishment. Emotional exhaustion, which is considered to represent the initial stage of burnout, was positively associated with this syndrome ( $r=0.59$ ), while personal accomplishment exhibited weak negative correlation with exhaustion ( $r=0.23$ ) and moderate negative correlation with burnout ( $r=0.45$ )<sup>18</sup>.

Among possible explanatory theories, the sociopsychological view is the most widely accepted. It is based on a model developed by Maslach, which stresses the influence of personal and workplace factors on the occurrence of the

triad of emotional exhaustion, depersonalization and low personal accomplishment. However, it should be noticed that occurrence of any one component of burnout alone is not necessarily followed by the other two<sup>12,13,19,20</sup>.

Emotional exhaustion is characterized by feelings of tiredness and insufficient emotional energy. Depersonalization manifests as detachment from and low empathy toward clients and coworkers. Low personal accomplishment translates as unproductivity and poor self-esteem in relation to work<sup>21</sup>.

Unspecific symptoms, such as sleeplessness, irritability, sadness, apathy, and manifestations of anxiety cause distress, which may lead to short- or long-term sickness absence and high turnover rates, with the consequent impact on the quality of care delivery<sup>1</sup>. Manifestations of exhaustion might occur simultaneously to cardiovascular and musculoskeletal disorders<sup>9,11-16</sup>.

Job satisfaction might be defined as a positive affect or emotion in the self-assessment of the work performed<sup>22</sup>. It is a pleasant or positive emotional state felt when goals at work are accomplished, and is influenced by the workers' personal experiences, values and beliefs<sup>21-25</sup>.

According to Mourão et al.<sup>24</sup>, job satisfaction seems to be related to multiple factors, including educational level, work overload, training received, autonomy, interaction, social support, and sex. Jardim et al.<sup>19</sup> describe job dissatisfaction as a predictor of burnout.

The widest consensus among the authors who focus on the psychosocial aspects of work corroborates Locke's theory, developed at the end of the 1960s<sup>21,25</sup>. According to this view, satisfaction results from a "complex and dynamic interaction among the overall living conditions, labor relations, work process, and control workers have over their living and working conditions"<sup>25</sup>.

A systematic review of burnout among physicians found higher prevalence among those allocated to ICU, followed by family medicine, emergency care, internal medicine, and orthopedics. The authors stressed the multifactorial nature of burnout, the involved factors being related to the institution, the work environment and how workers cope with stress, particularly organizational factors, labor relations, and emotional rewards. They call the attention to the need to identify and consider the determinants of satisfaction — a variable of affective nature — in preventive interventions<sup>26</sup>.

Burnout affects healthcare workers, leading to sickness absenteeism due to psychological disorders, several comorbidities, and might even make them leave the profession. All these outcomes increase the workload of the remaining coworkers, as well as costs to organizations, and consequently also to the public health administration<sup>26,27</sup>.

The incidence of burnout varies considerably in the literature, from 4% to 86% as a function of the investigated population<sup>14,15</sup>, assessment instruments used, and analysis of burnout components. Data collected by the department of occupational medicine at the hospital in which the present study was performed indicate that in a period of 2 years, 26% of sick leaves were due to mental and behavioral disorders, the largest proportions corresponding to the employees allocated to ED (9.1%) and ICU (6%).

As a function of the aforementioned considerations, the aims of the present study were to analyze the three components of burnout and job satisfaction, and test the correlation of the results with demographic and occupational characteristics of workers allocated to ED and ICU in a large public hospital. With this, our intention is to contribute to the knowledge on burnout among workers allocated to the most stressful hospital departments to enable early recognition of this syndrome, which is relevant for the purpose of prevention and control.

## METHODS

The present cross-sectional analytical study was performed at a large public hospital in Belo Horizonte, Minas Gerais, Brazil, with 481 beds and that serves as referral center for clinical emergencies.

The postoperative ICU and ED were selected because they exhibited the highest rates of sickness absence, calculated by dividing the number of sick leaves by the total number of employees in the analyzed period. Further selection criteria were: departments which provide care to acutely ill adults, with a multiprofessional staff including physicians, physical therapists, nurses and nursing technicians, operating 24/7, having more than 50 employees, and restricted visiting hours.

The sample initially comprised 93 workers allocated to the selected departments, however one refused

participation, and another did not return the questionnaires. As a result, the sample comprised 91 participants (98%), 58 from ED (13 physicians, 6 physical therapists, 14 nurses and 25 nursing technicians) and 33 from ICU (10 physicians, 6 physical therapists, 8 nurses and 9 nursing technicians). All the participants signed an informed consent form.

The questionnaires were administered to all the physicians, physical therapists and nurses. However, the number of nursing technicians was quite large, therefore we decided to include only a random sample of 30% of them, without replacement and in compliance with the staff proportional composition.

We administered three self-report questionnaires: one for sociodemographic and occupational data; the Maslach Burnout Inventory-Human Services Survey (MBI-HSS) and the Job Satisfaction Scale (JSS20/23). The questionnaires were delivered together and collected 5 days later by the principal investigator.

We developed an ad hoc 13-item sociodemographic and occupational questionnaire to investigate the following variables: age, sex, marital status, number of children, educational level, occupation, employment relationship, weekly working hours, length of work in the current job, and intention to leave the profession.

Burnout was investigated by means of the MBI-HSS version validated for the Portuguese language by Lautert<sup>16</sup>, and Carlotto and Camara<sup>28</sup>. The items were responded on a 5-point Likert scale validated by Tamayo<sup>14</sup>. The questionnaire comprises 22 items distributed across three subscales: emotional exhaustion (EE), 9 items; depersonalization (DP), 5 items to measure occurrence of impersonal reactions and lack of empathy; and low personal accomplishment (PA), 8 items to measure self-perceived professional competence and success. Respondents are required to rate the frequency of the analyzed feelings and attitudes as follows:

1. never;
2. seldom;
3. sometimes;
4. often); or
5. always<sup>29,30</sup>.

Scores are separately calculated for each subscale.

Burnout was defined as a continuous variable and analyzed based on mean scores, terciles and quartiles<sup>29</sup>. Participants with mean/quartile scores on EE and DP  $>3$ , and  $<3$  on PA were considered as with burnout. Categorization, in turn, was based on terciles: low risk of burnout — scores on both EE and DP below the 33rd percentile and PA above the 67th percentile; moderate risk — scores on all three subscales between the 33rd and 67th percentiles; and high risk — EE and DP above the 67th percentile and PA below the 33rd percentile<sup>2,30</sup>.

Job satisfaction was investigated using the questionnaire JSS20/33, developed by Meliá and Peiró<sup>31</sup>, and adapted for use in Brazil by Carlotto and Câmara<sup>32</sup>. It comprises 20 items distributed across three domains: satisfaction with hierarchical relationships, satisfaction with the work environment, and intrinsic satisfaction and opportunities for professional growth. Each item is responded on a five-point Likert scale<sup>12,31,32</sup>. Categorization was based on the subscale scores and defined as high when scores were  $>3$  on all three domains.

The results relative to the sociodemographic and occupational variables are described as frequency distributions. Hospital departments and occupational groups were compared by means of the  $\chi^2$  and Fisher's exact tests. The Mann-Whitney and Kruskal-Wallis tests were used for variables without normal distribution<sup>33,34</sup>.

Association between outcomes (burnout and job satisfaction) was tested by means of uni- and multivariate linear regression analysis through the stepwise method<sup>35</sup>. The data were processed and analyzed using program R version 3.01. The study obtained ethical clearance via *Plataforma Brasil*, CAAE 16335813.9.3001.5129.

## RESULTS

Most participants were female (58%), married/with stable partner (53%), with average age 37 years old, being more than 75% above 41. About 76% of the sample was composed of employees with permanent job employment (Civil Servants Statute or Consolidation of Labor Laws), with 11.3 years in the job, on average. More than half of the sample (57%) had attended graduate studies. About 70% of the participants had a second job. The sociodemographic and occupational characteristics were similar between ICU and ED workers, except for work schedule, working hours and intention to leave

the profession (Table 1). The number of employees who worked daytime on weekdays and daytime shifts + weekends was higher for ICU ( $p=0.036$ ), as well as the number of employees who worked 30 hours/week ( $p=0.039$ ) and those who had already thought of leaving the profession ( $p=0.029$ ).

High scores on EE were found for 25% of the sample, 3rd quartile=3.11 (Table 2). In turn, the scores on neither DP nor PA corresponded to the range defined for diagnosis of burnout ( $>3$  and  $<3$ , respectively).

Scores  $>3$  (cut-off point) were found for job satisfaction domains intrinsic satisfaction/professional growth opportunities (3.61) and hierarchical relationships (3.26) (Table 2). The single domain with score  $<3$  was that related to the work environment, thus indicative of dissatisfaction. Quartile-based analysis indicated intrinsic satisfaction/professional growth opportunities for all the participants, and satisfaction with hierarchical relationships for 75%, while 25% were dissatisfied with their work environment (2.40) and hierarchical relations (2.77). Comparison between hospital departments revealed higher mean and percentile burnout scores for ICU employees ( $p<0.006$ ), associated with EE (3.33) in 25% of the cases (Table 3). The mean score on domain work environment was 2.75 for ICU employees, with indicates dissatisfaction. Job dissatisfaction was found for 25% of the ED employees and 50% of those allocated to ICU (Table 3).

On comparative analysis per hospital department, the mean/percentile scores for EE were higher for the ICU employees ( $p<0.006$ ) however, only 25% of them exhibited scores above the cut-off point (3.33) (Table 3). The mean score for satisfaction with the work environment was 2.75 for this group, therefore indicative of dissatisfaction ( $p<0.05$ ). On percentile-based analysis, dissatisfaction with the work environment was found for 25% of the ED employees and 50% of those allocated to ICU.

The mean and 25th percentile scores on satisfaction with hierarchical relations were higher for ED employees. While 25% of the workers in both departments did not exhibit scores above the cut-off point ( $>3$ ), the difference was not significant ( $p=0.78$ ).

Table 4 shows there was not statistically significant difference for either burnout or job satisfaction among the various occupational groups. Twenty-five percent of the participants, except for the physical therapists, exhibited scores indicative of EE ( $>3$ ). Dissatisfaction with the work

**Table 1.** Sociodemographic and occupational profile of 91 healthcare workers at two departments of a public hospital, Belo Horizonte, Brazil, 2014 (n=91).

Variables	Department				p	
	ED		ICU			
Sex	Female	33	56.9%	20	60.6%	0.73
	Male	25	43.1%	13	39.4%	
Occupational group	Nursing technicians	25	43.1%	9	27.3%	0.40
	Nurses	14	24.1%	8	24.2%	
	Physical therapists	6	10.3%	6	18.2%	
	Physicians	13	22.4%	10	30.3%	
Marital status	Single	21	36.2%	12	36.4%	0.52
	Married/stable partner	29	50.0%	19	57.6%	
	Separated	8	13.8%	2	6.1%	
Educational level	Secondary school	14	24.1%	6	18.2%	0.37
	Higher education	14	24.1%	5	15.2%	
	Graduate studies/master's degree/PhD	30	51.7%	22	66.7%	
Employment relationship*	Permanent/CSS	45	77.6%	24	72.7%	0.30
	Permanent/LLC	5	8.6%	1	3.0%	
	Temporary	6	10.3%	7	21.2%	
Work schedule	Daytime, weekdays, no weekends	6	10.3%	6	18.2%	0.03
	Daytime shifts and weekends	13	22.4%	11	33.3%	
	Night shift and weekends	29	50.0%	16	48.5%	
	Other	10	17.2%	0	0.0%	
Working hours*	24 hours/week	14	24.6%	13	40.6%	0.03
	30 hours/week	32	56.1%	9	28.1%	
	40 hours/week	11	19.3%	10	31.3%	
Second job	No	18	31.0%	9	27.3%	0.70
	Yes	40	69.0%	24	72.7%	
Double shift at hospital	No	51	87.9%	32	97.0%	0.25
	Yes	7	12.1%	1	3.0%	
Has thought of leaving the profession	No	43	74.1%	17	51.5%	0.02
	Yes	15	25.9%	16	48.5%	

ED: emergency department; ICU: intensive care unit; \*excluding healthcare workers categorized as "other"; CSS: Civil Servant Statute; LLC: Labor Laws Consolidation.

environment (mean <3) was found for the physicians and nursing technicians. Scores denoting satisfaction with the work environment were not reached by 25% of the participants in any occupational groups and half of the nursing technicians. The mean score on satisfaction with hierarchical relationships was <3 for the physicians. On percentile-based analysis, 25% of the participants were found to be dissatisfied, except for the nurses.

The results of multivariate analysis of the three burnout components is described in Table 5. Variables hospital department, intrinsic satisfaction/professional growth opportunities, satisfaction with hierarchical relationships, occupational group (nurses and nursing technicians) and having already thought of leaving the profession exhibited significant association with EE. This set of variables explained 55% of the prevalence of EE in the analyzed sample.

Working in ICU increased EE, while allocation to ED did not. Higher intrinsic satisfaction/professional growth opportunities was associated with reduction of 0.426 points on the average EE score. Each point of increase in the score on satisfaction with hierarchical relationships was associated with reduction of 0.176 point on the EE score. The average score on EE was lower for physical therapists compared to all the other occupational groups, and higher than that of the participants who reported to had already thought of leaving the profession compared to those who had not (Table 5).

PA was significantly associated with intrinsic satisfaction/professional growth opportunities and marital status. These two variables accounted for 39% of the variability of this component of burnout. Each point of increase in the score on intrinsic satisfaction/professional growth

opportunities increased 0.416 points, on average, the PA score, 95% confidence interval (95%CI) 0.30–0.54. Single participants exhibited significantly higher mean score on PA compared to all other categories of variable marital status.

DP was significantly associated with intrinsic satisfaction/professional growth opportunities, age and occupational category; these variables explained 35% of the incidence of DP. Each point of increase in the score on intrinsic satisfaction/professional growth opportunities decreased 0.359 points, on average, the DP score. Each additional year of age decreased 0.032 points the average DP score. Physical therapists and nursing technicians exhibited significantly lower mean score on DP compared to the physicians.

The final linear regression model for all three job satisfaction components is described in Table 6.

Variables EE, PA and employment relationship explained 44% of the variability of component intrinsic satisfaction/professional growth opportunities. Each point of increase in the EE score was associated with mean reduction of 0.455 points (95%CI -0.67–0.24) of the mean score on intrinsic satisfaction/professional growth opportunities. Each point of increase in the PA score increased 0.290 points (95%CI 0.00–0.58), on average, the mean score on intrinsic satisfaction/professional growth opportunities.

Variables EE, years in the current job and having thought of leaving the profession explained 32% of the variability of satisfaction with the work environment. The participants who reported to had thought of leaving the profession scored, on average, 0.467 points (95%CI -0.80– -0.13) less on satisfaction with the work environment

**Table 2.** Burnout and job satisfaction indicators relative to 91 healthcare workers at two departments of a public hospital, Belo Horizonte, Brazil, 2014 (n=91).

Indicators/diagnostic criteria		Mean	SD	95%CI	Q1	Q2	Q3
Burnout	Emotional exhaustion (>3)	2.71	0.72	2.56-2.85	2.22	2.67	3.11
	Low personal accomplishment (<3)	3.73	0.53	3.64-3.84	3.38	3.75	4.13
	Depersonalization (>3)	1.99	0.69	1.84-2.12	1.40	2.00	2.40
Job satisfaction (>3)	Intrinsic and PGO	3.61	0.73	3.46-3.76	3.25	3.75	4.00
	Work environment	2.98	0.84	2.80-3.14	2.40	3.20	3.60
	Hierarchical relationships	3.26	0.78	3.09-3.42	2.77	3.36	3.82

SD: standard deviation; 95%CI: 95% confidence interval; Q: quartile; PGO: professional growth opportunities.

**Table 3.** Comparison of burnout and job satisfaction between workers at two departments of a public hospital. Belo Horizonte, Brazil, 2014 (n=91).

Indicators/diagnostic criteria		ED	ICU	p	
Burnout	Emotional exhaustion (>3)	Mean	2.54	3.00	0.00
		SE	0.09	0.12	
		Q1	2.00	2.44	
		Q2	2.44	2.89	
		Q3	3.00	3.33	
	Low personal accomplishment (<3)	Mean	3.78	3.66	0.43
		SE	0.07	0.10	
		Q1	3.5	3.25	
		Q2	3.75	3.75	
		Q3	4.13	4.13	
	Depersonalization (>3)	Mean	1.93	2.08	0.31
		SE	0.09	0.12	
		Q1	1.40	1.40	
		Q2	1.80	2.00	
		Q3	2.40	2.60	
Job satisfaction (>3)	Intrinsic and PGO	Mean	3.66	3.53	0.89
		SE	0.08	0.16	
		Q1	3.25	3.00	
		Q2	3.75	3.75	
		Q3	4.00	4.25	
	Work environment	Mean	3.10	2.75	0.05
		SE	0.10	0.16	
		Q1	2.40	2.00	
		Q2	3.20	2.60	
		Q3	3.60	3.40	
Hierarchical relationships	Mean	3.27	3.24	0.78	
	SE	0.11	0.13		
	Q1	2.91	2.64		
	Q2	3.36	3.36		
	Q3	3.82	3.82		

ED: emergency department; ICU: intensive care unit; SE: standard error; Q: quartile; PGO: professional growth opportunities; \*p value on the Mann-Whitney test.

Variables EE, occupational group and employment relationship explained 36% of the variability of component satisfaction with hierarchical relationships.

Each point of increase in the score for EE was associated with mean reduction of 0.533 points (95%CI 0.72– -0.35) in the score for satisfaction with hierarchical

**Table 4.** Comparison of burnout and job satisfaction indicators of workers at a public hospital according to occupational group, Belo Horizonte, Brazil, 2014 (n=91).

Indicators	Occupational group	Mean	SE	Q1	Q2	Q3	p	
Burnout	Emotional exhaustion (>3)	Nursing technicians	2.69	0.13	2.11	2.67	3.11	0.11
		Nurses	2.91	0.13	2.44	2.83	3.22	
		Physical therapists	2.32	0.23	1.67	2.22	2.78	
		Physicians	2.73	0.15	2.22	2.44	3.06	
	Low personal accomplishment (<3)	Nursing technicians	3.85	0.10	3.50	3.81	4.38	0.45
		Nurses	3.67	0.11	3.38	3.75	4.00	
		Physical therapists	3.77	0.17	3.38	3.88	4.13	
		Physicians	3.61	0.10	3.25	3.63	4.00	
	Depersonalization (>3)	Nursing technicians	1.92	0.12	1.40	2.00	2.40	0.09
		Nurses	1.96	0.13	1.40	1.80	2.40	
		Physical therapists	1.70	0.22	1.00	1.60	2.10	
		Physicians	2.25	0.14	1.80	2.20	2.80	
Job satisfaction (>3)	Intrinsic and growth opportunities	Nursing technicians	3.60	0.14	3.00	3.75	4.25	0.81
		Nurses	3.65	0.15	3.25	3.88	4.00	
		Physical therapists	3.73	0.16	3.38	4.00	4.00	
		Physicians	3.53	0.15	3.25	3.50	4.00	
	Work environment	Nursing technicians	2.91	0.15	2.40	2.80	3.40	0.66
		Nurses	3.06	0.16	2.60	3.20	3.80	
		Physical therapists	3.18	0.29	2.50	3.50	3.70	
		Physicians	2.89	0.16	2.20	3.00	3.60	
	Hierarchical relationships	Nursing technicians	3.36	0.13	2.91	3.36	4.00	0.11
		Nurses	3.46	0.12	3.18	3.59	3.82	
		Physical therapists	3.31	0.26	2.46	3.36	3.77	
		Physicians	2.91	0.18	2.41	3.09	3.46	

SE: standard error; Q: quartile; \*p value on the Kruskal-Wallis test.



relationships. Physical therapists scored, on average, 0.661 points (95%CI -1.14- -0.18) less on satisfaction with hierarchical relationships compared to the nurses.

**Table 5.** Final regression model fit for burnout, Belo Horizonte, Brazil, 2014 (n=91).

Domain	$\beta$	95%CI	p
Exhaustion			
Emergency room			
Intensive care unit	0.373	0.15-0.59	0.00
Intrinsic satisfaction and professional growth opportunities	-0.436	-0.61- -0.26	0.00
Satisfaction with hierarchical relationships	-0.176	-0.35- -0.01	0.04
Physical therapists			
Nurses	0.618	0.27-0.96	0.00
Physicians	0.321	-0.03-0.67	0.07
Nursing technicians	0.374	0.05-0.70	0.02
Has thought of leaving the profession= yes	0.272	0.03-0.51	0.03
<b>R<sup>2</sup> (adjusted)=0.546</b>			
Personal accomplishment			
Intrinsic satisfaction and professional growth opportunities	0.416	0.30-0.54	0.00
Single			
Married/stable partner	0.238	0.04-0.43	0.00
Separated	0.506	0.21-0.80	0.00
<b>R<sup>2</sup> (adjusted)=0.391</b>			
Depersonalization			
Intrinsic satisfaction and professional growth opportunities	-0.359	-0.52- -0.20	0.00
Age	-0.032	-0.05- -0.02	0.00
Physicians	-0.389	-0.78-0.00	0.05
Physical therapists			
Nurses	-0.311	-0.64-0.02	0.06
Nursing technicians	-0.289	-0.58-0.00	0.05
<b>R<sup>2</sup> (adjusted)=0.345</b>			

$\beta$ : regression coefficient; 95%CI: 95% confidence interval.

The mean scores were lower for physicians and nursing technicians compared to nurses, but this difference was not significant.

**Table 6.** Final regression model fit for job satisfaction, Belo Horizonte, Brazil, 2014 (n=91).

Domain	$\beta$	95%CI	p
Intrinsic satisfaction and PGO			
Emotional exhaustion	-0.455	-0.67- -0.24	0.00
Personal accomplishment	0.290	0.00-0.58	0.05
Permanent/CSS			
Permanent/LLC	0.097	-0.37-0.57	0.68
Temporary	0.396	0.06-0.73	0.02
Other	0.091	-0.54-0.72	0.77
<b>R<sup>2</sup> (adjusted)=0.441</b>			
Satisfaction with work environment			
Emotional exhaustion	-0.402	-0.62- -0.18	0.00
Years in current job	-0.064	-0.10- -0.03	0.00
Has thought of leaving the profession = no			
Has thought of leaving the profession = yes	-0.467	-0.80- -0.13	0.00
<b>R<sup>2</sup> (adjusted)=0.315</b>			
Satisfaction with hierarchical relationships			
Emotional exhaustion	-0.533	-0.72- -0.35	0.00
Nurses			
Physical therapists	-0.661	-1.14- -0.18	0.00
Physicians	-0.466	-0.94-0.00	0.06
Nursing technicians	-0.142	-0.54-0.26	0.49
WS=daytime, weekdays, no weekends			
WS=daytime shifts and weekends	-0.185	-0.68-0.31	0.46
WS=night shifts and weekends	-0.094	-0.52-0.33	0.66
WS=other	-0.863	-1.46- -0.27	0.00
<b>R<sup>2</sup> (adjusted)=0.364</b>			

$\beta$ : regression coefficient; 95%CI: 95% confidence interval; PGO: professional growth opportunities; CSS: Civil Servant Statute; LLC: Labor Laws Consolidation; WS: work schedule.

## DISCUSSION

Jobs involving care delivery to severely ill patients are stressful and have considerable emotional impact on providers<sup>1,11-13,36</sup>. Emergency/urgent care medicine is described in the literature as one of the fields with the highest rates of burnout<sup>11,20,37</sup>.

Twenty-five percent of the participants in the present study had EE as main sign of burnout, which finding agrees with reports in the literature<sup>11-13,17-19</sup>. In the study by Oliveira and Maia<sup>38</sup>, 31% of healthcare staff members exhibited some degree impaired mental health. Values above the 3rd quartile should be seen as a warning signal pointing to the need for specialized follow-up and preventive measures to protect the mental health of workers.

Studies conducted in Europe and Anglo America reported rates of 20% to 45% of burnout among physicians, and higher rates of mortality, suicide, general and mental disorders compared to the overall population<sup>22,36,37</sup>. In Brazil, Ferreira and Lucca<sup>39</sup> found high EE and DP and low PA among 25% of nursing technicians.

High levels of stress among healthcare workers have been attributed to the intrinsic characteristics of their job<sup>38</sup>, and the fact it involves dealing with human suffering under inadequate working conditions, with long working hours and low salary, associated with failure of the compensatory mechanisms to adjust to stress. Low control on managerial and clinical tasks leads to negative attitudes in regard to the work environment and facilitates the occurrence of burnout<sup>21</sup>.

Demands for high productivity and efficiency behave as continuous stressors liable to impair the health of workers, reduce their motivation to work, and contribute to the occurrence of errors and deterioration of the quality of services. This situation triggered several discussions on the approach that healthcare institutions should adopt to minimize or solve this problem<sup>21,36,39,40</sup>.

The sample characteristics — young workers, mainly female, working two daily shifts, with less than 7 years in the current job and the hospital, and having attended graduate studies — correspond to the profile of highest occupational vulnerability as reported in the literature. According to some studies, young and highly qualified workers are fitter to meet challenges and have higher expectations in regard to their careers. Therefore, managers should pay particular attention

to these employees, considering their potential for creative and innovative contributions, as well as to early signs of loss of such potential in association with mental disorders related to psychosocial risk factors at work<sup>7,10,10-13,41</sup>.

Most participants reported having already thought of leaving the profession, especially those allocated to ICU. This aspect, when associated with EE might impair the quality of service delivery<sup>11,15</sup>.

The participating nurses — predominantly female — exhibited the highest levels of EE, which might have been due to the accumulation of managerial and direct patient care tasks, in addition to the characteristics of professional training<sup>12,13</sup>. In turn, DP was highest among the physicians, who were mostly male. A study conducted with physicians in a military hospital found a prevalence of 10% of burnout and of 45% of abnormal scores on domain DP<sup>42</sup>.

PA was lowest among the single participants, particularly the youngest, who usually exhibit the highest professional expectations. This paradoxical result disagrees with reports in the literature<sup>17</sup>, according to which the risk of burnout is lowest among single, widowed or divorced workers<sup>12,13,43</sup>.

Positive correlation between EE and job dissatisfaction seems to represent the earliest identifiable indicator of burnout<sup>11</sup>.

Among healthcare workers, well-being reflects on collaborative practice, the quality of the care provided, patient safety, and institutional organization. Hall et al. found a relationship between poorer well-being and patient risk. Despite difficulties to establish a causal relationship, job dissatisfaction was associated with burnout and higher frequency of errors and inadequate practices. These authors recommend managers to invest in the well-being of workers to ensure high quality care delivery<sup>44</sup>.

Acknowledging the relevance of job satisfaction and the deleterious consequences of dissatisfaction led to several initiatives in the field of mental health to measure well-being and identify workers at high risk of burnout and thus implement preventive measures<sup>45</sup>.

In the present study, EE prevailed among nurses, which agrees with reports in the literature<sup>46,47</sup>, which further observe that the organization and division of labor contributes to increase the vulnerability of this occupational group.

EE was also higher among the participants who reported having already thought of leaving the profession. Quitting the profession, poor service quality, absenteeism, and high

turnover rates were described as consequences of occupational stress and burnout<sup>19</sup>.

Policies for promotion of occupational health and humanization of care might improve the receptivity to healthcare workers, potentiate preventive and rehabilitation actions, and facilitate the identification of factors associated with illness and exhaustion among workers to thus eliminate them<sup>15</sup>. The low mean scores on EE and DP found in the present study suggest that strategies to improve employee recognition implemented at the analyzed hospital might have contributed to reduce the occurrence of burnout, as was also found in other studies<sup>11,18</sup>.

Possible limitations of the present study derive from inconsistencies in the literature in regard to the detection and categorization of burnout as a function of methodological issues, difficulties in diagnosis, and instruments used. Discrepancies derived from the choice of mean values or terciles should be seen as a call to consider possible underestimation of burnout, and might also account for the variation in the rates reported in the literature. Although we included all the physicians, nurses and physical therapists, and 30% of the nursing technicians, the sample size might have been insufficient to detect some differences, and thus increase the odds of type II error.

Longitudinal studies are needed to establish more accurately the relationships among determinants of burnout and job satisfaction.

## CONCLUSION

Nursing work at ICU, dissatisfaction with hierarchical relationships, lack of professional growth opportunities, and having already thought of leaving the profession accounted for more than half of the prevalence of EE in the analyzed sample. This situation poses a considerable challenge to managers as a function of the effects of EE on the both employees and institution, with consequent negative impact on the quality of care delivery. Satisfactory quality of life and humane healthcare should be the grounds of public policies to promote mental, physical and social balance among individuals in organizations.

Positive correlation between EE and job dissatisfaction behaved as the earliest identifiable indicator of burnout. Periodic evaluations for early detection and prevention are important to reduce occupational disorders.

High levels of job satisfaction contribute to reduce the occurrence of burnout and to improve the relationship with service users, resulting in higher trust in the organization, better cohesion among coworkers in the workplace, and compliance with the principles of high-quality care delivery.

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Correspondence address: Eliane Dias Gontijo - Faculdade de Medicina da Universidade Federal de Minas Gerais - Avenida Alfredo Balena, 190, sala 825 - CEP: 30130-100 - Belo Horizonte (MG), Brazil - E-mail: [egontijo@medicina.ufmg.br](mailto:egontijo@medicina.ufmg.br)

