

Prevalence of burnout syndrome among military physicians at a public hospital in Rio de Janeiro, Brazil

Prevalência da síndrome de *burnout* em médicos militares de um hospital público no Rio de Janeiro

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ABSTRACT | Background: Burnout syndrome is a sociopsychological disorder which develops in response to emotional tension and occupational stress, and is triggered by continuous stressors to which workers are exposed. It comprises three domains: emotional exhaustion, depersonalization and reduced personal accomplishment. **Objectives:** To establish the prevalence of physical and emotional stress (burnout) among military physicians at Marcilio Dias Naval Hospital, Rio de Janeiro, Brazil. **Methods:** Cross-sectional, exploratory and descriptive study with quantitative approach. Data collection was performed from March through June 2016. Assessment instruments used were Maslach Burnout Inventory and a sociodemographic questionnaire. Results: Burnout was more prevalent among women (57.1%), the participants who lived with a partner (64.3%), with age under 50 years old (100.0%), income up to 15 times the equivalent of the minimum wage (78.6%), who practiced physical activity (57.1%) and no leisure activities (78.6%). Alcohol consumption and smoking behaved as significant risk factors. Prevalence was higher for the depersonalization domain (44.8%), followed by personal accomplishment (28.4%) and emotional exhaustion (6.6%). **Conclusion:** The professionals at the analyzed military hospital exhibited considerable levels of burnout, especially in regard to domain depersonalization. We call the attention to the need to develop preventive programs against burnout, particularly targeting workers exposed to emotional exhaustion, to avoid the occurrence of illness.

Keywords | burnout, professional; occupational health; depersonalization

RESUMO | Introdução: A síndrome de *burnout* é um transtorno sociopsicológico que se desenvolve como uma resposta à tensão emocional e ao estresse relacionado ao trabalho, sendo desencadeada por estímulos estressores contínuos aos quais o trabalhador é submetido. Apresenta-se em três dimensões: exaustão emocional, despersonalização e diminuição da realização profissional. **Objetivos:** Verificar a prevalência de estresse físico e emocional (síndrome de *burnout*) em médicos militares do Hospital Naval Marcílio Dias, no Rio de Janeiro (RJ). **Métodos:** Trata-se de um estudo exploratório, descritivo, com delineamento transversal e abordagem quantitativa. A coleta de dados foi realizada entre os meses de março e junho de 2016. Utilizou-se como instrumento de pesquisa o Maslach Burnout Inventory e um questionário sociodemográfico. **Resultados:** A análise dos dados apontou prevalência da síndrome de *burnout* em médicos militares do sexo feminino (57,1%), que vivem com companheiro (64,3%), com faixa etária menor de 50 anos (100,0%), renda mensal de até 15 salários mínimos (78,6%), praticam atividade física (57,1%) e não praticam atividade de lazer (78,6%). O consumo de tabaco e álcool se mostrou fator de risco importante. A dimensão mais comprometida foi a despersonalização (44,8%), seguido pela realização profissional (28,4%) e exaustão emocional (6,0%). **Conclusão:** Os profissionais que atuam no hospital militar apresentam níveis consideráveis da síndrome de *burnout* com altos valores de despersonalização. Ressaltamos a importância de serem desenvolvidos programas de prevenção ao *burnout*, principalmente para os profissionais que estão expostos às situações de desgaste emocional, a fim de se evitar o adoecimento.

Palavras-chave | esgotamento profissional; saúde do trabalhador; despersonalização.

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INTRODUCTION

Stress is a part of the lives of most people, as consequence of their daily work routine and commitments. It might manifest in many different ways, as *e.g.*, cardiovascular problems, psychiatric or behavioral disorders.

Changes in work processes, concerning both production and organization, led to demands of better quality of services provided, and consequent need for workers to develop new skills. This phenomenon is particularly evident in health services, as work is performed within a context characterized by suffering, and thus professionals are required to develop additional interpersonal competencies¹.

An understanding and discussion of burnout syndrome demand consideration of aspects related with performance, management and organization of work, and the social and environmental context. Work plays a relevant role in this regard, and has high potential to cause physical, social and psychological harm, which might be felt through the experience of occupational stress².

Term burnout was first suggested by the psychologist Herbert Freudenberger, in 1974, in an article entitled "Staff Burn-out," in which he discussed job dissatisfaction in association with emotional stress in the workplace³. The idea denoted by this term is a state of "burning," of being "consumed by fire." In time, this term began to be metaphorically used to allude to emotional exhaustion⁴.

According to Gil-Monte e Peiró⁵, while there is no univocal definition of burnout syndrome, there is some consensus on that, from the sociopsychological perspective, the one formulated by Maslach and Jackson⁶ is the most accepted and widely used. According to these authors, burnout is a reaction to chronic emotional tension, characterized by physical and/or psychological exhaustion, a cold and depersonalized attitude in regard to people, and a feeling of inadequacy vis-à-vis the tasks which should be performed. The characteristics of work are the main determinants of the trend of individuals to develop burnout syndrome⁷.

The most widely accepted definition of burnout is based on clinical sociopsychological aspects, namely, the response to the emotional tension generated by excessive direct contact with people^{8,9}. It is triggered by stressors to which workers are continually exposed, and causes emotional

effects which translate as psychosomatic manifestations in the personal and occupational spheres. Symptoms develop according to the situations to which individuals are exposed¹. The initial response is strong, workers increase the pace of work to compensate for their professional frustration, which might result in excessive overload, and consequent mental and physical exhaustion¹⁰.

The degree of satisfaction of healthcare professionals is directly related to the quality of the services provided by the health system for which they work¹¹⁻¹³.

Burnout syndrome is a multidisciplinary sociopsychological notion which involves three independent components: emotional exhaustion (lack of energy, a feeling of cynicism and powerlessness to deal with stressors, frustration and tension), depersonalization (emotional insensitivity, dehumanized attitude in regard to clients, coworkers and the service organization) and reduced personal accomplishment¹⁴⁻¹⁶.

Healthcare providers are one of the groups with the highest rates of burnout syndrome as a function of the responsibilities inherent to the task of providing care to people, their direct influence on the maintenance of life, and the need to cope with death. Professionals involved in palliative care are even more prone to develop burnout, for dealing with more severely ill patients, and consequently with more deaths¹⁶⁻¹⁹.

Individuals who develop clinical manifestations derived from job dissatisfaction might resort to the use of substances such as alcohol. Alcohol is used as anxiolytic, sedative, or as a means to escape work-related problems, and thus contributes to the reduce the performance of workers in their daily tasks²⁰.

Considering the current situation, the aims of the present study were to investigate the prevalence of physical and emotional stress (burnout syndrome) among military physicians at Marcilio Dias Naval Hospital, Rio de Janeiro, Brazil, and analyze the correlation between socio-economic and behavioral data and the psychological status of these professionals.

METHODS

The present cross-sectional, exploratory and descriptive study with quantitative approach was conducted at

Marcilio Dias Naval Hospital, Rio de Janeiro. This hospital was selected because it includes physicians with military background. Data collection was performed from March through June 2016.

The study population was composed of military physicians from all specialties. The inclusion criteria were: having worked at the institution for more than six months, and working time of at least 20 hours per week. Eligible subjects who did not complete the Maslach Burnout Inventory — Human Services Survey (MBI-HSS) were excluded.

We administered two self-report questionnaires. One was designed to collect sociodemographic data, such as age, sex, academic training, marital status and whether there were children in the family. We also analyzed occupational data, weekly working hours, number and type of jobs, night shift work, supervisor positions, and vacation. Finally, the questionnaire also investigated leisure and lifestyle data, including physical activity, smoking, alcohol consumption and use of illegal substances.

The other instrument was the MBI-HSS version adapted to the Portuguese language and validated by Maurício Robayo Tamayo in 1997. This is a widely used questionnaire, and the standard instrument to investigate burnout syndrome. It comprises 22 questions: items 1, 2, 3, 6, 8, 13, 14 and 20 correspond to emotional exhaustion, items 4, 7, 9, 12, 17, 18 and 19 to personal accomplishment, and items 5, 10, 11, 15 and 22 to depersonalization. The scores were categorized as high, moderate or low risk, the criteria varying for each subscale: for emotional exhaustion, scores ≥ 27 were considered high, 17 to 26 moderate, and < 16 low; for depersonalization, > 13 high, 7 to 12 moderate, and < 6 low. Domain personal accomplishment has a reverse score, which was categorized as follows: > 33 high, 34–39 moderate, and ≥ 40 low. Presence of burnout is only considered when the scores on all three subscales correspond to high risk.

Quantitative variables were analyzed by means of descriptive statistics, namely, percentages, and presented in tables, using software *Statistical Package for the Social Sciences* (SPSS®) version 23.

Categorical variables were expressed as ratios and proportions. The significance level was set to 5%, *i.e.*, results were considered to be significant when $p < 0.05$ with the corresponding 95% confidence interval (CI).

Differences between proportions were analyzed by means of Pearson's test (χ^2).

Participation was voluntary and the participants' anonymity was ensured. All the participants signed an informed consent form.

The study project was submitted to the Brazil Platform, which sent it to the research ethics committee of Holy House of Mercy Hospital of Juiz de Fora, Minas Gerais, Brazil, in compliance with the National Health Council Resolution no. 466/2012, on research involving human beings. The study was approved by ruling no. 1,537,266/2016.

RESULTS

There were about 600 physicians at the Marcilio Dias Naval Hospital. Many questionnaires were excluded because they were not fully responded. As a result, the final sample comprised 134 military physicians, with predominance of females (52.2%), under 50 years old (93.0%), with a partner (54.5%) and monthly income of up to 15 times the equivalent of the minimum wage (63.3%). Most participants reported to perform physical activity (66.4%). The rates of smoking (4.5%) and drinking (10.4%) were low. No participant reported to use illegal drugs (Table 1).

Clinical (66.4%) specialties predominated over the surgical ones. Most participants worked up to 48 hours per week (69.3%), undertook on-call duty twice per week (80.6%), worked in up to 2 hospitals (86.5%) and also in their private office (84.3%) (Table 1).

Addition of scores on MBI-HSS showed that 82.1% of the participants scored within the high-risk range in at least one of the three domains. The prevalence of burnout for the full sample was 10.4% (Figure 1).

On separate analysis, the prevalence of high-risk scores was 44.8% for depersonalization, 28.4% for reduced personal accomplishment, and just 6.0% for emotional exhaustion (Figure 2).

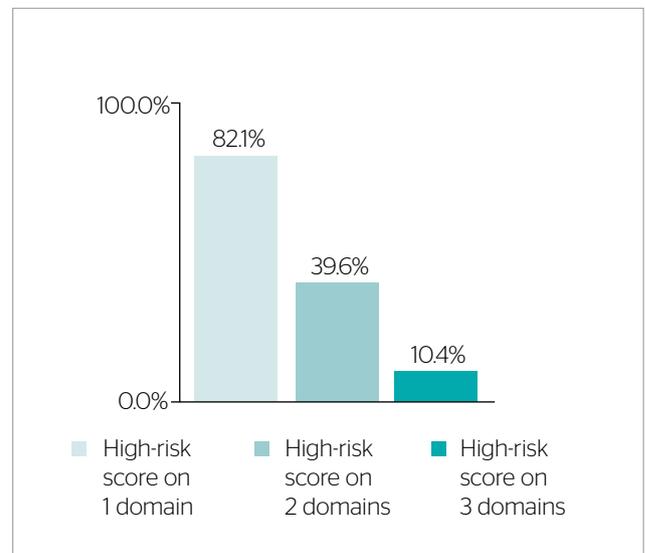
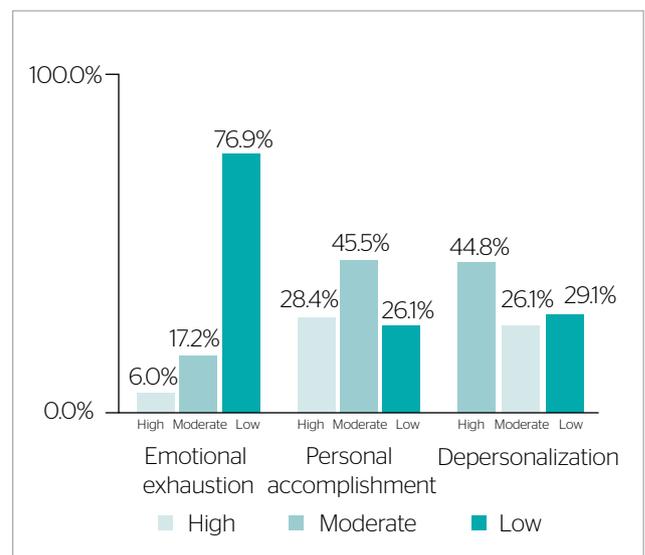
In regard to sociodemographic aspects, occurrence of burnout was most frequent among the women under 50 years old — among whom prevalence (high-risk scores on all three domains) was 11.8%, participants with monthly income less than 15 times the equivalent of the minimum wage (14%) and with a partner (12.5%) (Table 2).

Table 1. Sociodemographic distribution of the study participants, Rio de Janeiro, 2016 (n=134).

	n	%
Sex		
Male	64	47.8
Female	70	52.2
Age range		
Up to 50 years old	119	93.0
>50 years old	9	7.0
Children		
Yes	62	50.0
No	62	50.0
Marital status		
Lives alone	60	45.5
With partner	72	54.5
Monthly income		
Up to 15 times the equivalent of the minimum wage	57	63.3
>15 times the equivalent of the minimum wage	33	36.7
Physical activity		
Yes	89	66.4
No	45	33.6
Smoking		
Yes	6	4.5
No	128	95.5
Medical specialty		
Clinical	89	66.4
Surgical	45	33.6
On-call duty		
Up to twice per week	108	80.6
More than twice per week	26	19.4
Private office		
Yes	113	84.3
No	21	15.7
Working hours		
<48 hours/week	79	69.3
48 hours/week	35	30.7
Number of hospital jobs		
Up to 2	109	86.5
More than 2	17	13.5

Among the environmental risk factors, physical activity stood out, as 13.3% of the participants who reported not to practice any exhibited burnout. Also smoking and alcohol consumption had considerable relationship with burnout, with prevalence of 50.0% and 28.6%, respectively (Table 2).

As concerns occupational factors, all the participants with burnout worked in clinical specialties; 15.7%

**Figure 1.** Percent distribution of participants per high-risk scores on burnout domains, Rio de Janeiro, 2016 (n=134).**Figure 2.** Percent distribution of participants per risk level on burnout domains, Rio de Janeiro, 2016 (n=134).

exhibited high-risk scores on all three domains, which characterizes occurrence of the syndrome. Burnout was more frequent among the participants who undertook on-call duty twice per week (11.1%), also worked at their private office (19.0%) and more than 48 hours per week (14.3%). Difference was not found as a function of the number of hospital jobs (Table 3).

To summarize, the results show that burnout syndrome was more frequent among female military physicians (57.1%), who lived with a partner (64.3%), were under 50 years old (100.0%) and earned less than 15 times the equivalent of the minimum wage per month (78.0%). Alcohol consumption and smoking behaved as significant risk factors for development of burnout (Table 4).

Table 2. Distribution of participants per high-risk scores on Maslach Burnout Inventory (MBI) domains and sociodemographic variables, Rio de Janeiro, 2016 (n=134).

	High-risk score on 1 domain		High-risk score on 2 domains		High-risk score on 3 domains	
	n	%	n	%	n	%
Sex						
Male	49	76.6	24	37.5	6	9.4
Female	61	87.1	29	41.4	8	11.4
Age range						
Up to 50 years old	101	84.9	48	40.3	14	11.8
>50 years old	4	44.4	2	22.2	-	-
Monthly income						
Up to 15 times the equivalent of the minimum wage	51	89.5	28	49.1	8	14.0
>15 times the equivalent of the minimum wage	25	75.8	10	30.3	2	6.1
Marital status						
Lives alone	46	76.7	26	43.3	5	8.3
With partner	62	86.1	26	36.1	9	12.5
Children						
Yes	49	79.0	27	43.5	6	9.7
No	53	85.5	23	37.1	7	11.3
Physical activity						
Yes	69	77.5	30	33.7	8	9.0
No	41	91.1	23	51.1	6	13.3
Leisure activities						
Yes	87	82.1	41	38.7	11	10.4
No	23	82.1	12	42.9	3	10.7
Smoking						
Yes	6	100	3	50	3	50
No	104	81.3	50	39.1	11	8.6
Alcohol consumption						
Yes	12	85.7	9	64.3	4	28.6
No	98	81.7	44	36.7	10	8.3

DISCUSSION

Burnout syndrome is a psychosocial disorder which affects workers exposed to excessively high demands and do not have means to respond in a satisfactory manner. Emotional exhaustion, depersonalization and low personal accomplishment develop in response to chronic stress at work²¹.

The workers most susceptible to burnout are the ones involved in interpersonal care. This profile mainly corresponds to healthcare professionals, physicians in particular. This occupational context is characterized by ambiguous professional or personal interactions and strong emotional situations.

Scores compatible with burnout were obtained for 10.4% of the participants, *i.e.*, high on all three domains. In the study by Blandin and Araujo²², conducted with medical residents at Doctor Carlos Arvelos Military Hospital, Caracas, Venezuela, the rate of burnout was 28.0%; the most affected parameters were organizational cohesion and supervisor's influence. The reason for these

findings might probably be the hierarchical structure of military hospitals, where relationships between civil and military personnel, staff and residents seem to be under a rigid organization of work, with lack of collaboration, obedience and discipline imposed as fundamental aspects, and impersonal treatment. The rate of burnout was probably higher at the Caracas hospital because the study was performed with medical residents, most of whom are young.

Among the physicians at Marcilio Dias Naval Hospital at high risk of burnout, we found that the most affected domain was depersonalization (44.8%), followed by personal accomplishment (24.8%) and emotional exhaustion (6.0%). Similarly, in a study conducted with interns at Yale University²³, among the ones at high risk of burnout depersonalization was the domain most affected in the assessments performed in 2009 (63.6%) and 2010 (84.9%). Also the study by Magalhães et al.²⁴, which analyzed anesthesiologists in the Federal District, Brazil, found high prevalence of depersonalization (28.3%), followed by emotional exhaustion

Table 3. Distribution of participants per high-risk scores on Maslach Burnout Inventory (MBI) domains and occupational risk factors, Rio de Janeiro, 2016 (n=134).

	High-risk score on 1 domain		High-risk score on 2 domains		High-risk score on 3 domains	
	n	%	n	%	n	%
Medical specialty						
Clinical	71	85.5	38	45.8	13	15.7
Surgical	21	65.5	7	21.9	-	-
On-call duty						
Up to twice per week	88	81.5	41	38.0	12	11.1
More than twice per week	22	84.6	12	46.2	2	7.7
Private office						
Yes	15	71.4	6	28.6	4	19.0
No	95	84.1	47	41.6	10	8.8
Working hours						
<48 hours/week	67	84.8	24	30.4	7	8.9
48 hours/week	27	77.1	19	54.3	5	14.3
Number of hospital jobs						
Up to 2	81	83.5	45	41.3	12	11.0
More than 2	15	88.2	7	41.20	2	11.8

Table 4. Prevalence of burnout syndrome per analyzed factors, Rio de Janeiro, 2016 (n=134).

	n	%
Sex		
Male	6	42.9
Female	8	57.1
Age range		
Up to 50 years old	14	100.0
>50 years old	-	-
Children		
Yes	7	50.0
No	7	50.0
Physical activity		
Yes	8	57.1
No	6	42.9
Alcohol consumption		
Yes	4	28.6
No	10	71.4
Medical specialty		
Clinical	14	100.0
Surgical	-	-
On-call duty		
Up to twice per week	12	85.7
More than twice per week	2	14.3
Marital status		
Lives alone	5	23.7
With partner	9	64.3
Monthly income		
Up to 15 times the equivalent of the minimum wage	11	78.6
>15 times the equivalent of the minimum wage	3	21.4
Leisure activities		
Yes	3	21.4
No	11	78.6
Smoking		
Yes	3	21.4
No	11	78.6
Working hours		
<48 hours/week	7	58.3
48 hours/week	5	41.7
Number of hospital jobs		
Up to 2	12	85.7
More than 2	2	14.3
Private office		
Yes	4	28.6
No	10	71.4

(23.1%). Therefore, we might infer that physicians have a feeling of personal accomplishment, but the working conditions, characterized by lack of support, long interrupted working hours and often inadequate salary, make depersonalization and emotional exhaustion stand out as triggers of burnout.

Burnout was more frequent among the women (57.1%), as is also described in Packham's Medscape National Physician Burnout & Depression Report²⁵, in which the syndrome affected 48% of the analyzed women. According to Carlotto and Palazzo²⁶, changes occurred within the family dynamics, and the proportion of women who work increased in recent years. Also in the study by Silva et al.²⁷ burnout was more frequent among women. The reason might be that most women face a double burden, and need to reconcile their professional responsibilities with the management of family life. Therefore, given the current social structure, women are exposed to overload, with consequent interference with their job performance, resulting in physical and emotional stress.

On analysis per age range, the prevalence of burnout was 69.2% among the participants aged 35 to 44 years old; the second group most frequently affected was the one with age 28 to 34 (23.2%). Similar results were reported by Magalhães et al.²⁴, in whose study age range 30 to 50 predominated (64.2%), and age range 27 to 35 in Pereira et al's.¹⁷ study. In turn, in Packham's²⁵ study the most prevalent age range (35.0%) was 45 to 54 years old. After age 54, the incidence of burnout decreased considerably in all these studies, which suggests that over time, and as a function of their professional experience, physicians learn to cope better with stress and the feelings derived from the experiences in the workplace. As a result, aging is associated with less work-related physical and mental stress.

According to Carlotto and Palazzo²⁶, individuals with a stable partner are less predisposed to develop burnout. However, in the present study, the incidence of the syndrome was higher among the participants who lived with a partner (64.3%). The same was the case in the study by Silva et al.²⁷, in which exhaustion was more frequent among the married participants (48.1%), and in the study by Rizo-Baeza et al.¹⁶, in which 52.4% of the participants with burnout syndrome lived with a partner. However, we should call

the attention to the fact that none of these studies analyzed the emotional satisfaction of individuals with their relationships, and that analysis of the marital status does not reflect their actual emotional status. Nevertheless, these data indicate that family life and life outside work interfere with the work and psychological conditions of physicians in the workplace. Therefore, risk factors, such as conjugal and family problems, added to excessive workload and emotional tiredness, contribute to the occurrence of the burnout syndrome.

Most of the participants with burnout did not practice physical activity (57.1%), defined as at least 30 minutes of exercise 3 times per week. This finding has an interesting connection with data in Packham's study²⁵, in which upon being inquired as to the best way to cope with burnout, 50.0% of the participants mentioned physical exercise. In the study by Magalhães et al.²⁴, burnout was detected in 57.1% of the sedentary participants, and in the study by Sánchez et al.¹⁰, none of the participants with burnout practiced physical activity. These data disagree with the results of the present study, and show that each individual approaches physical exercise in his/her own way.

Weight et al.²⁸, in their study conducted with residents at Mayo Clinic, did not find difference in the rate of burnout between a group which participated in an exercise program and controls. In the present time, the increasing social demands for healthy lifestyles might positively or negatively interfere with the individual attitude of people vis-à-vis physical exercise. While for some exercise is a source of pleasure and distraction, to others is unpleasant, and the imposition to have a healthy lifestyle might actually increase their levels of stress.

Among surgeons, higher dependence on multidisciplinary work, need for greater physical fitness, noise in the operating room, exposure to radiation, latex, infection and excessive heat, and time limitations cause greater physical and emotional exhaustion, particularly among residents, who are just taking their first steps in surgical specialties²². In the study by Gouveia et al. at Clinical Hospital of Recife, Brazil³, burnout was more frequent among surgical residents, with prevalence of emotional exhaustion of 75%. Similar results were obtained in the study by Blandin and Araujo²², in which higher levels of occupational stress and burnout were found among the general surgery residents.

Different from the aforementioned studies, in ours all the participants with burnout syndrome were members of the clinical staff (100.0%). This discrepancy might be due to the fact that the participants in our study had all already concluded their professional training, while the analyzed physicians from Clinical Hospital of Recife were residents, and residency programs impose longer working hours and salaries below the ones adequate to the actual workload. In addition, the number of surgeons in our study was very small, only 45, which might have not yielded valid statistical results.

One of the limitations of the present study derives from the small number of studies which addressed burnout among military physicians, which would be relevant for more thorough comparisons. In addition, out of a population of about 600 physicians at the Marcilio Dias Naval Hospital, only 134 questionnaires were analyzed, as many were excluded for not having been fully responded.

The observations above indicate that the current model of work at hospitals is not satisfactory, and is made even worse by excessive work, low salaries and high levels of professional responsibility, which interfere with the relationship of physicians with both patients and employers¹⁸. According to some authors, burnout makes healthcare professionals lose their interest in innovations, which hinders the spread of evidence-based practices^{4,29}.

These facts notwithstanding, medical practice is associated with countless motives for psychological gratification: relieving pain and suffering, curing diseases, saving lives, making accurate diagnoses, having feelings of competence, teaching, providing advice, educating, preventing diseases, and receiving recognition and gratitude. All these factors might contribute to prevent the occurrence of burnout. Some protective measures targeting this population are needed, such as adequate salaries and working hours, regular training of multidisciplinary staffs including periodic planning meetings, and provision of psychological counseling services.

CONCLUSION

We report the prevalence of burnout syndrome, and detected high risk of development among female

and young (under 50 years old) physicians. Measures are needed to help professionals feel more motivated and confident at work. Future studies, with

different populations, might increase the knowledge on burnout and suggest better coping means to the exposed professionals.

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