Factors associated with burnout syndrome in medical residents of a university hospital

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Summary

Objective: To determine the prevalence of burnout syndrome among resident physicians of various specialties and to evaluate associated factors.
Method: The Maslach Burnout Inventory questionnaire and a sociodemographic questionnaire were used to evaluate factors associated with the syndrome. Burnout was defined as the association of high emotional exhaustion, depersonalization and low professional achievement. Multivariate analysis was performed after adjustment of the Poisson model with the identification of risk factors and calculation of prevalence ratios (PR). Of the 250 resident physicians registered with Hospital das Clínicas of Pernambuco, 129 participated in the study.
Results: In the three domains that characterize burnout syndrome, we found a low level of professional achievement in 94.6% of resident physicians interviewed, a high level of depersonalization in 31.8%, and 59.7% with a high level of emotional exhaustion. The prevalence of burnout was 27.9%. Having suffered a stressful event in the last six months (PR: 8.10; 95CI 1.2-57.2) and being a student of surgical specialty (PR: 1.99; 95CI 1.2-3.3) were independently associated with burnout.
Conclusion: The prevalence of burnout found in resident physicians is in accordance with previous Brazilian studies. Residents of surgical specialties and those who suffered some stressful event were identified as susceptible in this study. The early identification of risk factors is fundamental for the implementation of preventive measures against burnout syndrome.

Keywords: burnout, medical residency, medical education.

Study performed at Hospital das Clínicas of Universidade Federal de Pernambuco (HC-UFPE), Recife, PE, Brazil

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Introduction

The term burnout was coined by psychologist Herbert Freudenberger in 1974 in an article entitled "Staff Burnout," in which he discusses job dissatisfaction caused by professional stress.[1] Although there is no standard definition for burnout, it is described as a state of physical and mental exhaustion from work when coping methods are insufficient.[2] Burnout syndrome is defined as a triad composed of three domains: emotional exhaustion, depersonalization and decline in professional achievement.[3]

Emotional exhaustion reflects the stress dimension of burnout and encompasses feelings of hopelessness, loneliness, depression, anger, impatience, irritability, tension, decreased empathy, a sense of lack of energy, and worry. Depersonalization is an attempt that a person makes to put distance between themselves and the recipients of the service, actively ignoring the qualities that make them unique individuals, motivating a sense of alienation and indifference towards others. This makes working with other people often unpleasant and unwanted. Low professional achievement or low job satisfaction, in turn, can be described as a feeling that very little has been achieved and what is accomplished is worthless.[2,4]

The consequences of burnout syndrome on health include: gastrointestinal disorders, prolonged flu symptoms, shortness of breath, hypertension, headache, insomnia,

myalgia, pruritus, allergies, hair loss, sexual dysfunction, demotivation, difficulty concentrating and more.[5] Also, there is a correlation between burnout and suicidal thinking.[6] Therefore, this is a public health problem with disastrous consequences that must be prevented in the workplace.

Stressors that are associated with or may increase the possibility of burnout among physicians include: excessive demands that reduce the quality of care, long working hours, numerous work shifts, the need to deal with suffering and death, and more.[7] In medical training, residency is a critical and very stressful period in which constant overloading and sleep deprivation are observed, as well as possibly fatigue and fear of making mistakes.[8] It is a favorable period for the development of burnout syndrome, due to its duality of roles (learning and work) and strong pressure derived from preceptors, society and the residents themselves.[9] Lack of autonomy, competitiveness, new expectations, inadequate support from supervisors and irregular work schedules are other problems of residency that correlate with burnout.[10]

The objective of our study was to determine the prevalence of burnout among resident physicians at Hospital das Clínicas – Universidade Federal de Pernambuco (HC-UFPE) and to evaluate its associated factors.

Method

This is a cross-sectional descriptive study carried out at the HC-UFPE in October and November 2015. The target population was residents enrolled in the medical residency program that year. Data collection was done through self-administered questionnaires, and confidentiality was maintained. All participants signed a free and informed consent form. There were 250 registered residents, of whom 129 participated in the survey. The total number of residents was not reached due to difficulty in approaching some residents in the following situations: vacation period, external rotation, working hours at the time of questionnaires, non-return of the questionnaires and lack of consent to participate in the survey.

Burnout syndrome was evaluated based on the Maslach Burnout Inventory (MBI), a version adapted to Brazilian Portuguese[11] and structured with 22 questions subdivided into the areas of emotional exhaustion, depersonalization and professional achievement. In order to classify the emotional exhaustion domain, we used the following scoring criteria: low (≤ 18 points), moderate (19 to 26 points) and high (≥ 27 points). The classification of the depersonalization domain was done according to the following score: low (≤ 6 points), moderate (seven to 12 points) and high (≥ 13 points). For the professional achievement domain, the classification was made according to the following criterion: low (≤ 33 points), moderate (34 to 39 points) and high (≥ 40 points). The criterion used in our study to define burnout syndrome was the presence of high values for the emotional exhaustion and depersonalization domains, combined with a low score for professional achievement.[5,12]

A sociodemographic questionnaire was also used to evaluate factors associated with burnout syndrome. Specialties considered as "surgical clinic" were: general surgery, orthopedics, urology, plastic surgery, surgery of the digestive system, vascular surgery, gynecology and obstetrics, ENT, and ophthalmology. The group named "other clinics" included internal medicine, pediatrics, dermatology, radiology, psychiatry, neurology, infectious diseases, nephrology, cardiology, oncology, endocrinology, rheumatology, gastroenterology, and family and community medicine. The following were considered "stressful events": personal or family-related health problems, mourning, separation, difficult relationship with boss/colleagues/associates/patients, financial problems, relationship problems with family members. We considered regular physical activity as defined by the World Health Organization: over 150 weekly minutes of moderate activity (brisk walking, dancing, active participation in games and sports with children and walking with pets) or over 75 minutes of intense activity (cycling, aerobic exercises, fast swimming, sports and competitive games).

The data were analyzed using Statistical Package for Social Sciences – SPSS software version 13.0. In order to evaluate the personal and professional profile, habits, level of physical activity and living conditions of the residents participating in the study, percentages were calculated and the frequency distributions of the evaluated factors were constructed. Chi-square test was used to compare proportions.

To evaluate the factors associated (personal and professional profile and daily habits of residents) with burnout syndrome and its subdomains, a contingency table was constructed and the Chi-square test for independence was applied. In cases where the assumptions of the Chi-square test were not confirmed, Fisher's exact test was applied. All conclusions were taken considering the significance level of 5%. Multivariate analysis for the factors associated with burnout was done by adjusting the Poisson model with robust variance, while factor significance was assessed using Wald statistic. For entry into the model, we considered the variables with $p<0.2$ in the univariate analysis. To retain the variable in the final model, we calculated the prevalence ratios and considered $p<0.05$.

The research was performed after analysis and approval by the Ethics Committee of the Health Sciences Center of Universidade Federal de Pernambuco (CEP/CCS/UFPE), in accordance with Resolution No. 466/2012 on "Research involving Human Beings" of the Ministry of Health, Opinion No. 49197615.2.0000.5208.

Results

In relation to the personal profile of the participants, we found that most are in the first or second year of residency (67.4%), aged up to 28 years (52.9%), female (51.9%), not married (66.1%) and do not have children (87.9%). Regarding the professional profile of the residents, we found that most of the students do more shifts to supplement their income (84.5%), work up to an additional 24 hours (76.4%), performed four or more night shifts in the last month (75.6%) and works more than 60 hours per week (56.6%). About 80% of residents experienced a stressful event in the previous six months, 75% had adequate supervision at the medical residency, and the clinics hospital (HC) was the first place they chose to go (64.3%). Most of the participants do not practice intense physical activity (65.1%) and do drink alcohol (72.7%). As for housing, 50.4% of the residents are from Recife and 72.9% do not live with their parents.

Burnout syndrome was found in 36 of the 129 residents through the MBI questionnaire, resulting in a prevalence of 27.9%. As for the domains of burnout, the majority of the participants presented a high level of emotional exhaustion (59.7%) and a low level of professional effectiveness (94.6%). The level of depersonalization was high in 31.8% of the participants.

Table 1 compares residents who met criteria for burnout and those without the syndrome, illustrating the association with risk factors in the univariate analysis. Area

TABLE 1 Distribution of burnout syndrome according to the personal and professional profile of resident physicians at Hospital das Clínicas of Universidade Federal de Pernambuco.

Factor assessed	Has burnout syndrome		p-value
	Yes	No	
Year of residency			
1st to 2nd year	23 (26.4%)	64 (73.6%)	0.59*
3rd to 5th year	13 (31.0%)	29 (69.0%)	
Age			
Up to 28 years	20 (31.7%)	43 (68.3%)	0.71*
Older than 28 years	16 (28.6%)	40 (71.4%)	
Sex			
Male	17 (27.4%)	45 (72.6%)	0.90*
Female	19 (28.4%)	48 (71.6%)	
Marital status			
Not married	25 (29.8%)	59 (70.2%)	0.62*
Married	11 (25.6%)	32 (74.4%)	
Has children			
Yes	4 (26.7%)	11 (73.3%)	1.00†
No	31 (28.4%)	78 (71.6%)	
Specialization area			
Surgical medicine	16 (44.4%)	20 (55.6%)	0.01*
Other	20 (21.5%)	73 (78.5%)	
Extra shifts to supplement income			
Yes	31 (28.4%)	78 (71.6%)	0.75*
No	5 (25.0%)	15 (75.0%)	
Weekly hours of work			
Up to 60 hours	12 (21.4%)	44 (78.6%)	0.15*
More than 60 hours	24 (32.9%)	49 (67.1%)	

(*Continues*)

TABLE 1 (Cont.) Distribution of burnout syndrome according to the personal and professional profile of resident physicians at Hospital das Clínicas of Universidade Federal de Pernambuco.

Factor assessed	Has burnout syndrome		p-value
	Yes	No	
Stressful events in the previous 6 months			
Yes	35 (33.7%)	69 (66.3%)	<0.01*
No	1 (4.0%)	24 (96.0%)	
Adequate supervision during residency			
Yes	24 (25.0%)	72 (75.0%)	0.17*
No	12 (37.5%)	20 (62.5%)	
Regular physical activity			
Yes	9 (20.0%)	36 (80.0%)	0.14*
No	27 (32.1%)	57 (67.9%)	
Use of alcoholic beverages			
Yes	29 (31.2%)	64 (68.8%)	0.21*
No	7 (20.0%)	28 (80.0%)	
Place of origin			
Greater Recife area	21 (32.3%)	44 (67.7%)	0.26*
Other locations	15 (23.4%)	49 (76.6%)	
Lives with			
Parents	14 (40.0%)	21 (60.0%)	0.06*
Other relatives, friends or alone	22 (23.4%)	72 (76.6%)	

* p-value of the Chi-square test for independence; † p-value of Fisher's exact test.

of specialization, stress event in the previous 6 months, supervision of residency, workload, physical activity and living with parents, friends or alone were the variables yielding p<0.2 and thus submitted to multivariate analysis.

Table 2 shows the association between the resident profile and the MBI questionnaire domains. For the emotional exhaustion domain, the variables submitted to multivariate analysis due to p<0.2 were specialization area, having children, performing supplementary shifts to increase income, stress event in the previous six months, supervision at the residency and place of origin. In the depersonalization domain, the variables submitted to multivariate analysis were area of specialization, stress event in the last six months, physical activity and living with parents, friends or alone. For the professional achievement domain, the variables were marital status, having children, stress event in the previous six months and use of alcoholic beverage.

Table 3 shows the final model with the factors that remained independently associated with p<0.05. Burnout was about twice as prevalent in surgical residents (PR: 1.99; 95CI 1.20-3.29), and eight times more frequent in those who experienced stressful event in the previous six months (PR: 8.10; 95CI 1.15-57.16) after control for other covariates. These same factors were independently associated with high emotional exhaustion, while being in a surgical specialty residency was the only factor that was associated with high depersonalization in the multivariate analysis. No factor was independently associated with low achievement.

Discussion

The prevalence of burnout in medical residency, according to the international literature, ranges from 27 to 75%, depending on the specialty.[13] Brazilian studies, on the other hand, reveal a prevalence between 20 and 50%, using the same instrument adopted by us in this study: the MBI questionnaire. Half of the residents of internal medicine at a philanthropic hospital in São Paulo met the criteria for burnout in 2012.[14] In a study performed in 2004 at Hospital de Clínicas of Universidade Federal de Uberlândia, the authors found a prevalence of 20.8% of burnout in residents from several specialties,[9] similar to the figure found in 2009 at Hospital das Clínicas of Universidade Federal de Goiás, which was 18%.[6] A study with oncology residents only, from several centers in Brazil, identified a high prevalence of burnout (76%). However, using as a criterion the presence of the three dimensions of the syndrome, this value drops to less than 36%.[15] Our study demonstrated a prevalence of 27.9% of burnout syndrome in HC-UFPE residents, which is compatible with the average of other studies conducted in Brazil.

TABLE 2 Distribution of the emotional exhaustion, depersonalization and professional achievement domains, according to the personal and professional profile of resident physicians at Hospital das Clínicas of Universidade Federal de Pernambuco.

Factor assessed	Emotional exhaustion			Depersonalization			Professional achievement		
	Low/ Moderate	High	p-value	Low/ Moderate	High	p-value	Low	Moderate	p-value
Year of residency									
1st to 2nd year	33 (37.9%)	54 (62.1%)	0.43*	60 (69.0%)	27 (31.0%)	0.79*	82 (94.3%)	5 (5.7%)	1.00†
3rd to 5th year	19 (45.2%)	23 (54.8%)		28 (66.7%)	14 (33.3%)		40 (95.2%)	2 (4.8%)	
Age									
Up to 28 years	23 (36.5%)	40 (63.5%)	0.27*	38 (60.3%)	25 (39.7%)	0.20*	61 (96.8%)	2 (3.2%)	0.25†
Older than 28 years	26 (46.4%)	30 (53.6%)		40 (71.4%)	16 (28.6%)		51 (91.1%)	5 (8.9%)	
Sex									
Male	28 (45.2%)	34 (54.8%)	0.28*	42 (67.7%)	20 (32.3%)	0.91*	57 (91.9%)	5 (8.1%)	0.26†
Female	24 (35.8%)	43 (64.2%)		46 (68.7%)	21 (31.3%)		65 (97.0%)	2 (3.0%)	
Marital status									
Not married	31 (36.9%)	53 (63.1%)	0.43*	55 (65.5%)	29 (34.5%)	0.45*	82 (97.6%)	2 (2.4%)	0.04†
Married	19 (44.2%)	24 (55.8%)		31 (72.1%)	12 (27.9%)		38 (88.4%)	5 (11.6%)	
Has children									
Yes	9 (60.0%)	6 (40.0%)	0.10*	10 (66.7%)	5 (33.3%)	1.00*	12 (80.0%)	3 (20.0%)	0.04†
No	41 (37.6%)	68 (62.4%)		74 (67.9%)	35 (32.1%)		105 (96.3%)	4 (3.7%)	
Specialization area									
Surgical medicine	9 (25.0%)	27 (75.0%)	0.03*	20 (55.6%)	16 (44.4%)	0.06*	34 (94.4%)	2 (5.6%)	1.00†
Other	43 (46.2%)	50 (53.8%)		68 (73.1%)	25 (26.9%)		88 (94.6%)	5 (5.4%)	
Extra shifts to supplement income									
Yes	41 (37.6%)	68 (62.4%)	0.14*	75 (68.8%)	34 (31.2%)	0.74*	103 (94.5%)	6 (5.5%)	1.00†
No	11 (55.0%)	9 (45.0%)		13 (65.0%)	7 (35.0%)		19 (95.0%)	1 (5.0%)	
Weekly hours of work									
Up to 60 hours	25 (44.6%)	31 (55.4%)	0.38*	41 (73.2%)	15 (26.8%)	0.29*	52 (92.9%)	4 (7.1%)	0.47†
More than 60 hours	27 (37.0%)	46 (63.0%)		47 (64.4%)	26 (35.6%)		70 (95.9%)	3 (4.1%)	
Stressful events in the previous 6 months									
Yes	31 (29.8%)	73 (70.2%)	<0.01*	66 (63.5%)	38 (36.5%)	0.02*	100 (96.2%)	4 (3.8%)	0.13†
No	21 (84.0%)	4 (16.0%)		22 (88.0%)	3 (12.0%)		22 (88.0%)	3 (12.0%)	
Adequate supervision during residency									
Yes	43 (44.8%)	53 (55.2%)	0.04*	68 (70.8%)	28 (29.2%)	0.23*	91 (94.8%)	5 (5.2%)	1.00†
No	8 (25.0%)	24 (75.0%)		19 (59.4%)	13 (40.6%)		30 (93.8%)	2 (6.3%)	
Regular physical activity									
Yes	20 (44.4%)	25 (55.6%)	0.48*	35 (77.8%)	10 (22.2%)	0.09*	41 (91.1%)	4 (8.9%)	0.24†
No	32 (38.1%)	52 (61.9%)		53 (63.1%)	31 (36.9%)		81 (96.4%)	3 (3.6%)	
Use of alcoholic beverages									
Yes	35 (37.6%)	58 (62.4%)	0.26*	61 (65.6%)	32 (34.4%)	0.35*	90 (96.8%)	3 (3.2%)	0.09†
No	17 (48.6%)	18 (51.4%)		26 (74.3%)	9 (25.7%)		31 (88.6%)	4 (11.4%)	
Place of origin									
Greater Recife area	21 (32.3%)	44 (67.7%)	0.06*	42 (64.6%)	23 (35.4%)	0.38*	63 (96.9%)	2 (3.1%)	0.27†
Other locations	31 (48.4%)	33 (51.6%)		46 (71.9%)	18 (28.1%)		59 (92.2%)	5 (7.8%)	
Lives with									
Parents	11 (31.4%)	24 (68.6%)	0.21*	20 (57.1%)	15 (42.9%)	0.10*	34 (97.1%)	1 (2.9%)	0.67†
Other relatives, friends or alone	41 (43.6%)	53 (56.4%)		68 (72.3%)	26 (27.7%)		88 (93.6%)	6 (6.4%)	

* p-value of the Chi-square test for independence; † p-value of Fisher's exact test.

TABLE 3 Multivariate analysis of burnout syndrome and associated factors in resident physicians at Hospital das Clínicas of Universidade Federal de Pernambuco.

	Factor assessed	PR	95CI	p–value*
Burnout syndrome	**Specialty**			
	Surgical medicine	1.99	1.20-3.29	0.008
	Other	1.00	–	–
	Stressful event in the previous 6 months			
	Yes	8.10	1.15-57.16	0.036
	No	1.00	–	–
Emotional exhaustion	**Specialty**			
	Surgical medicine	1.35	1.04-1.74	0.022
	Other	1.00	–	–
	Stressful event in the previous 6 months			
	Yes	4.32	1.78-10.46	0.001
	No	1.00	–	–
Depersonalization	**Specialty**			
	Surgical medicine	1.65	1.007-2.71	0.047
	Other	1.00	–	–

PR: prevalence ratio; 95CI: 95% confidence interval; *p-value of the Wald test.

As for Brazilian studies including physicians after completion of residency, the prevalence of burnout is lower. A prevalence of 7.4% was found in 297 intensive care physicians in the city of Salvador.[16] The prevalence was also low (5.1%) among pediatricians and obstetricians/gynecologists of a teaching hospital in Pernambuco.[12] This difference in prevalence can be explained by the characteristics of residents and medical residency. Resident physicians, in addition to experiencing stressing factors that are inherent to the medical profession, are under the pressure of medical residency (training nature and educational structure) and face conflicts that are common to young professionals (seeking independence and autonomy, conflict between work and leisure).[8] Comparing the level of psychological stress among resident and non-resident physicians of Brazilian university hospitals, greater vulnerability to work stress was demonstrated in residents.[17] In addition, they are less able to cope with stress and feel less confident in accomplishing their tasks.

Regarding the domains of burnout, the high prevalence of low level of professional achievement is worth noting in our work (94.6%). This prevalence was much lower in other studies with physicians living in Brazil, ranging from 17.6 to 33.3%.[6,9,15] The exception was a study by Fabichak that found 70.8% of the residents with low level of professional achievement.[14] In our study, this can be explained by the period of data collection at the end of a school year, between October and November. Nevertheless, the physical and managerial difficulties experienced in the Unified Health System also contribute to the feeling of low professional achievement. The current study was conducted in a hospital linked to the public health system, whose resident physicians performed a small strike with temporary cessation of care in the period prior to data collection, due to the lack of basic conditions for professional practice. This event may have influenced the low professional achievement observed in our study and reflects the interference of the work environment in the personal satisfaction of the professional. According to Malasch, the lack of professional effectiveness seems to emerge more clearly from the lack of relevant resources, while emotional exhaustion seems to emerge from the presence of work overload.[2]

In the multivariate analysis, burnout was associated with surgical specialties. Thus, the risk of residents associated with surgical specialties developing burnout was twice as high as the risk of residents of other specialties (p=0.008). Previous studies have found that resident surgeons live under more stress than other medical professionals.[18,19] A Mexican study found that burnout is more prevalent in residents who work over 80 hours per week, being statistically more frequent in those with surgical specialties.[20] Justifications for the association between burnout and surgical specialties were not determined in our study. One possible explanation would be the fact that surgical medicine is an area that demands more workload and has more demanding instructors. The influence of supervisors' behavior on the prevalence of burnout

is known, so that residents who perceive themselves unappreciated by their teams are at greater risk of developing this condition.[21]

Being a resident of surgical areas was also independently associated with greater emotional exhaustion and depersonalization. A study from Uberlândia also showed that residents belonging to surgical areas presented greater depersonalization than those belonging to clinical areas.[9] Emotional exhaustion was recognized as a problem by surgical residents in South Korea, but directly explored in those programs.[18] This shows that although residents perceive the difficulties, Medical Residency Committees and preceptors do not generally recognize the professionals' susceptibility to burnout.

The other factor associated with burnout in the multivariate analysis was having suffered a stress event in the previous six months. These individuals were eight times more likely to develop burnout compared to those who did not experience a stressful event (p=0.036). Stressful events affect the physician in training in a negative way and can cause burnout.[22] Stressors inside and outside the scope of medicine are able to deplete the personal resources of residents.[10] In a Canadian study, the main sources of stress were tests and evaluations (38.9%), financial problems (25.5%) and family problems (7.4%).[22] We were unable to identify which type of stress event was most common in our sample. Nevertheless, we found that the burnout domain most often implicated was emotional exhaustion.

It is important that residents who are vulnerable to developing burnout syndrome seek psychological counseling. Resident physicians sought the psychological assistance group of the University of São Paulo more in the first year and due to factors related to adaptive crises.[23] Early identification of residents susceptible to burnout would be important in resolving this type of assistance. In addition, Pereira-Lima and Loureiro identified the presence of higher scores for social skills in residents without burnout and mental health problems. Since social skills such as communication, empathy and ability to work as a team can be learned, it is important to develop these skills during medical residency training in order to improve practice.[24]

Conclusion

The prevalence of burnout among resident physicians was 27.9%, consistent with other Brazilian studies. Most residents showed a low level of professional achievement. There was a significant association between burnout syndrome and both the practice of surgical specialties and the occurrence of a stressor event in the previous six months. Characterizing the burnout syndrome in resident physicians can contribute to the elaboration and consolidation of preventive and therapeutic measures in this population.

Resumo

Fatores associados à síndrome de *burnout* em médicos residentes de um hospital universitário

Objetivo: Determinar a prevalência da síndrome de *burnout* entre médicos residentes de várias especialidades e avaliar os fatores associados.
Método: Foram aplicados o questionário Maslach Burnout Inventory e um questionário sócio-demográfico para avaliar fatores associados à síndrome. *Burnout* foi definido pela associação de alto desgaste emocional e despersonalização e baixa realização profissional. Análise multivariada foi realizada por meio do ajuste do modelo de Poisson com a identificação dos fatores de risco e calculadas as razões de prevalência (RP). Dos 250 médicos residentes cadastrados no Hospital das Clínicas de Pernambuco, 129 participaram do estudo.
Resultados: Nos três domínios que caracterizam a síndrome de *burnout*, encontramos um baixo nível de realização profissional em 94,6% dos médicos residentes entrevistados, alto nível de despersonalização em 31,8% e 59,7% com alto nível de desgaste emocional. A prevalência de *burnout* encontrada foi de 27,9%. Ter sofrido evento estressante nos seis meses anteriores (RP: 8,10; IC 95% 1,2-57,2) e cursar especialidade cirúrgica (RP: 1,99; IC 95% 1,2-3,3) estiveram associados de forma independente ao *burnout*.
Conclusão: A prevalência de *burnout* encontrada em médicos residentes está de acordo com estudos brasileiros prévios. Residentes de especialidades cirúrgicas e aqueles que sofreram evento estressor foram identificados como susceptíveis neste estudo. A identificação precoce dos fatores de risco é fundamental para a implementação de medidas preventivas para o não desenvolvimento da síndrome.

Palavras-chave: *burnout*, residência médica, educação médica.

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