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Prevalence and factors associated with burnout among university professors

Prevalência e fatores associados da síndrome de Burnout em docentes universitários

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ABSTRACT | Background: Burnout is one of the main examples of health disorders directly related to work. This is a psychological syndrome that results from exposure to stressors in the workplace and represents a considerable psychosocial problem. **Objective:** To establish the prevalence of and factors associated with burnout among professors at public and private universities. **Methods:** We administered two self-report questionnaires—one for sociodemographic, psychosocial, occupational and health-related data, and the other based on the Maslach Burnout Inventory-Educators Survey—to professors at four public and private universities in Caicó, Rio Grande do Norte, Brazil. We subjected the data to univariate and bivariate analysis and also fitted a logistic regression model. **Results:** About 60% of the participants were categorized as in the earliest stage of burnout syndrome. Having a chronic disease and teaching a large number of courses were the only variables significantly associated with burnout. The average score on domain depersonalization was significantly higher among the participants who had a second job, those who reported to need professional updating and the ones who taught a large number of courses. The average score on domain emotional exhaustion was higher among the participants with some chronic disease and those with high blood pressure. **Conclusion:** The prevalence of burnout was high in the analyzed sample of university professors. Early detection of burnout symptoms might favor early treatment.

Keywords | Burnout, psychological; prevalence; teaching; education, higher.

RESUMO | Introdução: A síndrome de Burnout é um dos principais exemplos de distúrbio relacionado diretamente ao trabalho. Caracteriza-se como uma síndrome psicológica resultante da exposição a estressores presentes no contexto laboral e constitui relevante problema psicossocial. **Objetivos:** A pesquisa propôs identificar a prevalência e os fatores associados da síndrome de Burnout em docentes de universidades públicas e privadas. **Método:** Foram utilizados dois instrumentos autoaplicados: um com questões sociodemográficas, psicossociais, ocupacionais e de aspectos relativos à saúde e outro baseado no Maslach Burnout Inventory Educators Survey em professores de quatro instituições públicas e privadas do município de Caicó, Rio Grande do Norte, Brasil. Foram feitas as análises univariada e bivariada, bem como criado um modelo de regressão logística. **Resultados:** Observou-se que 61,6% dos docentes encontravam-se na fase inicial da síndrome. A presença de doenças de base e o elevado número de disciplinas foram as únicas variáveis associadas significativamente com a ocorrência de Burnout. As médias dos escores de despersonalização foram significativamente maiores em docentes que tinham outra ocupação, que relataram necessidade de atualização profissional e com número elevado de disciplinas. As médias dos escores de exaustão foram maiores nos professores com doença prévia e hipertensos. **Conclusões:** Este estudo demonstrou que a prevalência da síndrome de Burnout nos professores universitários no município de Caicó, Rio Grande do Norte, é relativamente alta. A detecção precoce de níveis sintomáticos de Burnout pode ser um bom indicador de possíveis tratamentos precoces.

Palavras-chave | Burnout; prevalência; docência; ensino superior.

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INTRODUCTION

Data gathered by the Brazilian National Institute of Social Security indicate that mental and behavioral disorders were the third leading cause of incapacity for work in the country, with a total of 668,927 cases in the period from 2012 to 2016. In addition, these conditions represented about 9% of the total number of granted sick pay and disability retirement benefits[1]. Stress, characterized as a state of tension that causes serious imbalance in the body, is one of the most common problems for human beings. Due to its consequences, occupational stress is a subject of discussion in the academic milieu, governmental agencies, organizations and trade unions[2].

Stress is part of the set of health problems which affect several occupational groups, including university professors. It arises from increased tension at work, in turn derived from violence in classrooms, physical exhaustion, poor working conditions and lack of material resources, in association with increasing responsibilities[3]. Indeed, professors have little time to perform their tasks, additional training, leisure activities and social life[4]. Given the nature and context of the professors' job, when stressors persist they are likely to cause burnout.

Burnout syndrome is defined as a set of signs and symptoms related to chronic occupational stress and corresponding to three aspects: emotional exhaustion, depersonalization and reduced personal accomplishment[5]. This is an individual and long-lasting process that might extend over many years, even decades, with gradual increase in severity. Affected individuals often do not perceive their condition, but on the contrary, they refuse to believe they have fallen to burnout.

Occurrence of burnout among healthcare and social science workers is one of the main focus of interest for researchers, while several studies clearly indicate that teaching is one of the occupations most exposed to burnout. As a result, more studies are needed to establish the impact of burnout on this population, as well as the teachers' personal characteristics associated with this syndrome[6].

As of lately, university professors are not only required to deliver classroom lectures, but they also have many other duties, including research activities, organizing workshops and seminars and supervising trainees and other programs for development[7].

Based on the notion of burnout and the current conditions of the teaching profession in Brazil, our aims in the present study were to establish the prevalence of and factors associated with burnout among professors at public and private universities and to analyze the relationship of burnout domains with sociodemographic, psychosocial, occupational and health-related variables.

METHODS

The present cross-sectional, descriptive and quantitative study was conducted at four universities (two public and two private) in Caicó, Rio Grande do Norte, Brazil. The study population consisted of tenured and non-tenured professors who performed their tasks on a regular basis. Professors in training, sabbatical or maternity leave were excluded.

Data collection was performed through an *ad hoc* self-report questionnaire with four sections:

- demographic data: sex, age, marital status, number of children;
- occupational variables: academic degrees, length in the profession, length in the current job, approximate number of students with daily interaction, single job, teaching as main occupation and residing in the same municipality as the university premises;
- psychosocial variables: need for professional updating, administrative tasks, multiple roles, teaching a large number of courses, availability of specialized medical follow-up, adequate and large classrooms, sufficient audiovisual resources, incentives for additional training, inclusivity and accessibility;
- general health: family history, chronic diseases (yes/no and which — cardiovascular diseases and/or diabetes).

We also administered a self-report questionnaire based on the Maslach Burnout Inventory-Educators Survey (MBI-ES), developed by Christina Maslach to analyze burnout among educators. This questionnaire comprises 22 questions with five response options (Likert scale, 1 to 5) distributed across the three domains of burnout: emotional exhaustion, depersonalization and reduced personal accomplishment[8].

The sample size was calculated based on an estimated prevalence of burnout, namely the proportion of individuals with this condition (50%). For a population of 150 professors, error margin of 15% and non-response rate of 20%, the calculated sample size was 79 participants. Participants were recruited by convenience sampling.

A database was developed with software STATA 10.0 (Stata-Corp College Station, Texas, USA) and the consistency of the entered data was verified. We subjected the data relative to sociodemographic, occupational, psychosocial and health-related variables to descriptive (univariate) analysis.

The association between average scores on burnout domains and sociodemographic, occupational, psychosocial and health-related variables was analyzed by means of Student's t-test. In all cases, the significance level was set to 5%. The association between burnout and sociodemographic, occupational, psychosocial and health-related variables was analyzed by means of the χ^2 test (bivariate analysis). Burnout was defined as present when the global score was ≥56 (median) and represented the primary analyzed outcome.

Multivariate analysis involved fitting a logistic regression model by means of hierarchical analysis to estimate prevalence ratios adjusted for the following variables: having a chronic disease, number of students with daily interaction, single job and teaching a large number of courses. The independent variables were entered individually and hierarchically, considering p=0.07 as cut-off point. Permanence of variables in the model was established according to the results of the likelihood, multicollinearity and Hosmer-Lemeshow tests. In all the cases the significance level was set to 5%.

The study was approved by the research ethics committee of State University of Rio Grande do Norte, Brazil, ruling no. 725,711. The participants manifested agreement to participate by signing an informed consent form. The participants' ethical rights were safeguarded as required by the National Health Council Resolution no. 466/12[9].

RESULTS

The sample comprised 100 professors from four (public and private) universities in Caicó, 50.5% of whom were female. The participants' age ranged from 23 to 59 years old; women predominated within age range ≤37 years old, and men within age range ≥38 years old. The largest proportion of participants had a master's degree (39.2%). The participants had 12 years, on average, of experience in the profession, and six years, on average, in the current job. About 59.8% of the participants worked full time, teaching was the main occupation for 80.4%, they interacted daily with about 37 students, on average, and 56.7% resided in the same municipality as the university premises.

About 92.8% of the participants reported needing professional updating, 63.9% had multiple roles and 22.7% taught a large number of courses. Most of the sample (70.1%) described their institution as inclusive, however, with limited accessibility (61.9%). According to the participants, classrooms were large and adequate (70.1%), audiovisual resources were sufficient (69.1%) and they received incentives for further training (66.0%). Yet 73.2% of the sample observed there was not specialized medical follow-up available to them. Most participants did not report any chronic disease (75.3%), 50.5% reported family history of high blood pressure, 34.0% of cardiovascular diseases and 30.9% of diabetes.

According to the scores on the burnout domains, 61.6% of the participants were categorized as in early stages of burnout, 35.3% as at syndrome onset and 2.1% as with possible burnout, while only 1.0% did not exhibit any indication of burnout. Average scores were: emotional exhaustion — 17.00, depersonalization — 5.00 and reduced personal accomplishment — 32.00 (Table 1).

The average score on domain depersonalization was significantly higher among the participants who reported that teaching was not their main occupation (p=0.33), to require updating (p=0.016) and who taught a large number of courses (p=0.40). The average score on domain emotional exhaustion was significantly higher among the participants with some chronic disease (p=0.049) and high blood pressure (p=0.024) (Table 2).

Burnout was defined as present when the global score was ≥56 (median) and represented the primary outcome on bivariate and multivariate analysis. Variables number of students in the classroom and single job were significantly associated with burnout (p=0.042 and p=0.067, respectively).

Number of courses taught exhibited weak association with burnout (p=0.065). In turn, having some chronic illness (diabetes or cardiovascular disease) was significantly associated with burnout (p=0.039) (Table 3).

Upon including the aforementioned sociodemographic, occupational, psychosocial and health-related variables into the multivariate model, only having some chronic disease (p=0.019) and teaching a large number of courses (p=0.042) were significantly associated with the outcome, being that burnout was independently more frequent among the participants with some chronic disease and teaching a large number of courses (Table 4).

DISCUSSION

Stress is part of the life of most people as a function of their daily work routine and commitments, and may manifest variably, e.g. as cardiovascular problems, psychiatric disorders or behavioral changes[10]. Among university professors, burnout is a complex and multidimensional phenomenon that results from the interaction of individual aspects with the work environment[11]. The participants in the present study exhibited high levels of burnout (total score 41 to 60) — indicative of the early stage of this syndrome.

In addition, the domain scores indicate that the participants could, indeed, feel distress in relation to their daily task of caring for others, since they were compelled to work in a state of physical and mental exhaustion. Acknowledging this situation is necessary for institutions to identify and tackle the determinants of burnout before it develops[12].

Similar findings were reported by Gonçalves et al.[13], who analyzed the prevalence of burnout among professors teaching first to fourth year courses at the undergraduate medical program of State University of Pará, Brazil, in 2011. According to these authors, the prevalence of burnout varies considerably among studies as a function of the population assessed and the cut-off points selected. A study with university professors in João Pessoa, Paraíba, Brazil, reported relevant findings: 43.4% of the participants exhibited poor levels of personal accomplishment[14], which rate agrees with that found in the present study.

Most participants had a master's degree. According to Wang et al.[11], there is no clear reason to assume that burnout might be related to academic degrees. One possible reason for burnout to appear at the onset of an institutional career is the inability of subjects to deal with difficulties[15]. As a rule, young professionals still need to learn how to cope with the work demands and to develop skills and relational maturity[16].

None of the analyzed sociodemographic variables was associated with the primary outcome. When present, sex differences might be due to three reasons: family duties, type of occupation and the influence of sex on socialization, and the largest participation of women in household chores and child care and their concern with the well-being of others[15].

Burnout was more frequent among the participants who taught a large number of courses. The job demands grow together with the number of students, with consequent increase of the susceptibility to burnout. Long daily working hours, teaching large numbers of courses and students, pressure to provide high-quality teaching (since the sample was of university professors) and intensive student/professor

Table 1. Descriptive analysis of burnout domains. Caicó, Rio Grande do Norte, 2019 (n=100).

Domain	Mean±SD	Median	Q25-Q75	Minimum-maximum
Emotional exhaustion	17.92±7.31	17.00	12.00-23.00	9.00-37.00
Depersonalization	6.82±2.78	5.00	5.00-7.75	5.00-20.00
Reduced personal accomplishment	31.46±5.19	32.00	28.00-35.75	19.00-40.00
Global score	56.23±8.88	56.50	50.25-63.00	38.00-72.00

SD: standard deviation.

Table 2. Mean and standard deviation of burnout domain scores according to sociodemographic, occupational, psychosocial and health-related variables. Caicó, Rio Grande do Norte, 2019 (n=100).

Variables	Mean ± SD		
	Emotional exhaustion	Depersonalization	Reduced personal accomplishment
Age			
≤37 years old	18.97±6.92	7.32±3.18	30.85±4.50
≥38 years old	17.12±7.74	6.41±2.31	32.06±5.48
Sex			
Female	17.55±7.10	7.08±3.11	31.12±5.54
Male	18.58±7.65	6.66±2.57	31.79±4.45
Number of children			
None or 1	18.24±7.20	6.80±2.53	31.23±4.87
2 or more	17.68±7.78	7.03±3.34	31.90±5.36
Length in the profession			
≤10 years	18.54±6.84	7.26±3.26	30.82±4.78
≥11 years	17.55±7.91	6.46±2.18	32.1±5.22
Length in current job			
≤5 years	16.88±6.10	6.76±2.71	31.5±5.22
≥6 years	19.31±8.38	7.00±2.93	31.40±4.85
Number of students			
≤30	17.81±7.65	6.93±2.83	31.15±4.91
≥31	18.43±6.98	6.79±2.81	31.89±5.21
Single job			
Yes	18.50±7.93	6.62±2.53	30.87±4.74
No	17.41±6.47	7.25±3.17	32.20±5.36
Main occupation			
Yes	17.91±7.23	6.57±2.40	31.62±4.89
No	18.68±8.06	8.10*±3.92(0.033)	30.73±5.60
Residence in the same municipality			
Yes	17.27±6.53	6.85±2.39	31.20±4.88
No	19.09±8.29	6.90±3.30	31.78±5.23
Professional updating			
Yes	18.33±7.43	6.96±2.88*(0.016)	31.53±4.89
No	14.57±5.59	5.71±0.95	30.42±6.90

Continue...

Table 2. Continuation.

Variables	Mean ± SD		
	Emotional exhaustion	Depersonalization	Reduced personal accomplishment
Administrative tasks			
Yes	18.03±6.69	6.94±2.58	31.69±4.89
No	18.10±8.39	6.76±3.16	31.07±5.25
Multiple roles			
Yes	18.30±7.13	6.85±2.22	31.38±4.97
No	17.62±7.84	6.91±3.66	31.57±5.16
Large number of courses			
Yes	19.45±7.41	7.95±3.40*(0.040)	30.59±5.63
No	17.65±7.34	6.56±2.55	31.70±4.84
Medical follow-up			
Yes	17.96±8.22	6.96±3.79	30.03±5.90
No	18.09±7.08	6.84±2.38	31.97±4.59
Appropriate classrooms			
Yes	18.32±7.49	6.89±3.00	31.48±5.36
No	17.44±7.13	6.82±2.34	31.37±4.18
Audiovisual resources			
Yes	17.85±7.43	6.83±2.96	31.62±5.12
No	18.53±7.31	6.96±2.48	31.06±4.84
Training incentives			
Yes	17.89±7.23	6.68±2.66	31.57±4.75
No	18.39±7.70	7.24±3.08	31.21±5.57
Inclusivity			
Yes	18.16±7.83	7.11±3.10	31.30±5.04
No	17.82±6.23	6.31±1.87	31.79±5.03
Accessibility			
Yes	18.08±7.36	6.54±2.12	31.83±4.88
No	18.05±7.42	7.08±3.15	31.21±5.13
Chronic diseases			
Yes	20.62±7.98*(0.049)	6.87±2.67	32.12±5.05
No	17.21±7.00	6.87±2.87	31.23±5.02
High blood pressure			
Yes	22.14±7.76*(0.024)	6.71±2.86	31.14±4.75
No	17.37±7.11	6.90±2.81	31.50±5.09

SD: standard deviation; *p<0.05.

Table 3. Frequency, χ^2 test results, p value, prevalence ratio and confidence interval for the association between primary outcome and sociodemographic, occupational, psychosocial and health-related variables. Caicó, Rio Grande do Norte, 2019 (n=100).

Variables	Occurrence of burnout (score ≥56)					
	n	%	χ^2	p	PR_c	95%CI
Sex						
Female	24	50.0	0.252	0.616	0.857	0.558–1.317
Male	21	42.9				
Age						
≤37 years old	25	51.0	0.518	0.472	1.224	0.794–1.888
≥38 years old	20	41.7				
Number of children						
None or 1	27	41.5	1.866	0.172	0.738	0.485–1.124
2 or more	18	56.2				
Length in the profession						
≤10 years	26	52.0	1.305	0.253	1.286	0.831–1.992
≥11 years	19	40.4				
Length in current job						
≤5 years	23	46.0	0.000	1.000	0.983	0.641–1.507
≥6 years	22	46.8				
Number of students						
≤30	22	37.9	4.152	0.042	0.643	0.422–0.979
≥31	23	59.0				
Single job						
Yes	22	37.9	3.349	0.067	0.643	0.422–0.979
No	23	59.0				
Main occupation						
Yes	35	44.9	0.124	0.725	0.853	0.521–1.395
No	10	52.6				
Residence in the same municipality						
Yes	23	41.8	0.686	0.408	0.798	0.522–1.221
No	22	52.4				
Professional updating						
Yes	43	47.8	0.346	0.556	1.672	0.508–5.503
No	2	28.6				
Administrative tasks						
Yes	29	49.2	0.222	0.638	1.1671	0.741–1.839
No	16	42.1				
Multiple roles						
Yes	29	46.8	0.000	1.000	1.023	0.654–1.602
No	16	45.7				
Large number of courses						
Yes	14	63.6	3.416	0.065	1.540	1.016–2.332
No	31	41.3				

Continue...

Table 3. Continuation.

Variables	Occurrence of burnout (score ≥56)					
	n	%	χ^2	p	PR_c	95%CI
Medical follow-up						
Yes	10	38.5	0.515	0.473	0.780	0.454–1.339
No	35	49.3				
Appropriate classrooms						
Yes	33	48.5	0.180	0.671	1.173	0.713–1.929
No	12	41.4				
Audiovisual resources						
Yes	32	47.8	0.034	0.854	1.102	0.682–1.781
No	13	43.3				
Training incentives						
Yes	31	48.4	0.121	0.728	1.142	0.713–1.829
No	14	42.4				
Inclusivity						
Yes	35	51.5	1.725	0.189	1.493	0.859–2.593
No	10	34.5				
Accessibility						
Yes	18	48.6	0.020	0.888	1.081	0.701–1.668
No	27	45.0				
Diabetes (family)						
Yes	14	46.7	0.000	1.000	1.009	0.636–1.600
No	31	46.3				
High blood pressure (family)						
Yes	25	51.0	0.518	0.472	1.224	0.794–1.888
No	20	41.7				
Cardiovascular diseases (family)						
Yes	16	48.5	0.007	0.935	1.070	0.687–1.666
No	29	45.3				
Chronic disease						
Yes	16	66.7	4.244	0.039	1.678	1.125–2.503
No	29	39.7				
Diabetes						
Yes	2	50.0	0.000	1.000	1.081	0.396–2.952
No	43	46.2				
High blood pressure						
Yes	9	64.3	2.107	0.147	1.482	0.934–2.351
No	36	43.4				
Cardiovascular diseases						
Yes	5	62.5	0.341	0.559	1.391	0.776–2.494
No	40	44.9				

PR_c: crude prevalence ratio; 95%CI: 95% confidence interval.

interaction contribute to cause exhaustion, which in turn may trigger burnout[15].

Most professors in Brazil have a double burden, work long hours and have more than one job, which situation characterizes work overload[3]. In the course of the teaching career, long daily working hours contribute to cause exhaustion and consequent burnout. Work overload might be due to lack of skills, even though high workloads are not unusual in the present time[5].

Depersonalization is the result of negative, sometimes indifferent and cynical feelings and attitudes toward individuals within the work environment. While it behaves as a protective factor, depersonalization might lead to dehumanization, and represents the interpersonal aspect of burnout. The average score on domain depersonalization was higher among the participants for whom teaching was not the main occupation, reported need for updating or taught a large number of courses.

Having some chronic disease was significantly associated with burnout. In a study of the determinants of the health/disease process among primary school teachers in São Paulo, Brazil, Santos[17] found that long years in the teaching profession, excessive number of students, exhausting working hours, additional responsibilities transferred to schools, reduced capacity for work and professional undervaluation contributed to cause illnesses among teachers, high blood pressure in particular.

Emotional exhaustion is characterized by a strong feeling of emotional tension, which causes a feeling of exhaustion, of lack of energy and of lack of emotional resources to cope with the work routine. It represents the individual aspect of burnout and is the first to manifest. In the present study, the participants with some chronic disease or high blood pressure exhibited the highest average scores on this domain.

Identifying the profile and early signs of burnout is crucial to implement preventive interventions[11]. Avoiding work-related diseases and deaths is possible, and thus one cannot passively admit work as a cause of disease, with consequent impact on the duration and quality of life[18].

University staffs should be aware of stressors and their impact on performance to establish adequate measures to minimize them and reorganize their actions[19]. The tasks of university professors include teaching as such, administration and research, which are valued differently and at times represent sources of conflict, given that teaching does not always receive the due recognition[20].

Additional studies should be conducted in Brazil to further the knowledge on the influence of individual and environmental variables on phenomena which interfere with the health of workers.

CONCLUSION

The results of the present study evidence that the prevalence of burnout among the analyzed university professors in Caicó was high. Variables teaching a large number of courses and having some chronic disease were significantly associated with burnout. Teaching not being the main occupation, need for professional updating and teaching a large number of courses were associated with the highest average scores on domain depersonalization. In turn, having a chronic disease and high blood pressure were associated with the highest average scores on domain emotional exhaustion.

Table 4. Logistic regression model for the association between burnout and occupational and health-related variables. Caicó, Rio Grande do Norte, 2019 (n=100).

Variables	Reference	Exposure	PR_c	95%CI	PR_{adj}	95%CI
Disease	Yes	No	1.678	1.125–2.503	3.561	1.235–10.273
Number of students	≥30	≤30	0.643	0.422–0.979	0.602	0.242–1.498
Large number of courses	Yes	No	1.540	1.016–2.332	2.998	1.042–8.622
Single job	No	Yes	0.643	0.422–0.979	0.481	0.196–1.181

PR_c: crude prevalence ratio; PR_{adj}: adjusted prevalence ratio; 95%CI: 95% confidence interval.

Early detection of burnout symptoms might be an accurate indicator of possible problems, thus enabling preventive interventions and the implementation of coping measures.

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