

Prevalence of burnout syndrome and associated factors in university professors working in Salvador, state of Bahia

Prevalência da síndrome de *burnout* e fatores associados em professores universitários atuantes na cidade de Salvador, estado da Bahia

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ABSTRACT | Introduction: Burnout syndrome is a phenomenon characterized by chronic emotional exhaustion that can lead to physical, psychological, and social consequences. Because they need to support themselves financially, university professors have accepted increasingly longer working hours and accumulated duties, resulting in greater exposure to factors that may induce the onset of mental disorders such as burnout syndrome. **Objectives:** This cross-sectional epidemiological study aimed to determine the prevalence of burnout syndrome and predisposing factors in university professors working in Salvador, Brazil. **Methods:** The sample consisted of 210 participants. The Maslach Burnout Inventory adapted for teachers, the gold standard for detecting burnout syndrome, and a sociodemographic questionnaire were administered to identify variables that may influence the development of burnout. Then, the data were compiled in Excel and analyzed with the aid of GraphPad Prism. **Results:** The prevalence of burnout was 41% (n = 86). A stratified data analysis showed that being under 40 years of age, being single, being childless, teaching natural sciences, and working at several institutions are risk factors for developing burnout syndrome. **Conclusions:** The prevalence of burnout syndrome in university professors was 41%. Professors who were young, single, childless, taught natural sciences, and worked at more than one institution were found to be more likely to develop burnout syndrome.

Keywords | professional burnout; stress; occupational health, faculty.

RESUMO | Introdução: A síndrome de *burnout* é um fenômeno caracterizado pelo esgotamento emocional crônico que pode gerar consequências físicas, psíquicas e sociais. Considerando a necessidade de manter-se financeiramente, os professores universitários têm aceitado jornadas de trabalho cada vez mais longas e um acúmulo de funções, tendo como consequência uma maior exposição a fatores que possam induzir o aparecimento de transtornos mentais, como a síndrome de *burnout*. **Objetivos:** O objetivo do presente trabalho é determinar a prevalência da síndrome de *burnout* e de fatores predisponentes em professores universitários da cidade de Salvador através de um estudo epidemiológico de corte transversal. **Métodos:** A amostra foi constituída por 210 participantes. Foram aplicados o Maslach Burnout Inventory adaptado para professores, instrumento padrão ouro para a detecção da síndrome de *burnout*, e um questionário sociodemográfico com o objetivo de identificar variáveis que possam influenciar no desenvolvimento de *burnout*. Em seguida, os dados foram compilados no Excel e analisados no GraphPad Prism. **Resultados:** A prevalência de *burnout* encontrada foi de 41% (n = 86). Uma análise estratificada dos dados identificou professores com menos de 40 anos, solteiros, sem filhos, da área de ciências naturais e trabalhando em diversas instituições como fatores de riscos para o desenvolvimento da síndrome de *burnout*. **Conclusões:** A prevalência de síndrome de *burnout* encontrada em professores universitários foi de 41%. Foi possível identificar que professores jovens, solteiros, sem filhos, da área de ciências naturais e vinculados a mais de uma instituição são mais vulneráveis ao desenvolvimento da síndrome de *burnout*.

Palavras-chave | esgotamento profissional; estresse; saúde do trabalhador, docentes.

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Funding: None

Conflicts of interest: None

How to cite: Silva LP, Santos JSP, Silva LL, Cezar IS, Abreu JSD, Cerqueira VP, et al. Prevalence of burnout syndrome and associated factors in university professors working in Salvador, state of Bahia. Rev Bras Med Trab. 2021;19(2):151-156. <http://dx.doi.org/10.47626/1679-4435-2020-548>

INTRODUCTION

The intense process of globalization and the technological advances observed in the past century have led to dramatic changes in the labor market.^{1,2} It has become more competitive, requiring workers to accumulate duties and accept longer working hours and low pay.³ Consequently, cases of stress, anxiety, depression, and occupational diseases have increased in several professional categories, such as teachers.^{4,5} Such situation is explained by the overload that these workers experience, especially at university level, where they perform teaching, extension, and research activities simultaneously.⁶ Accumulation of activities generates excessive stress, making teachers more likely to develop occupational diseases such as burnout syndrome (BS).

BS is a phenomenon that probably arose in the early days of humankind and has affected different professional categories over the centuries, especially teachers and health care workers.⁷ It is characterized by emotional exhaustion, depersonalization, and reduced professional and personal accomplishment, which may lead to physical, psychological, and social consequences affecting workers' quality of life and their performance at work.^{8,9} BS is well characterized in several professions, including physicians, nurses, physical therapists, and teachers.^{5,10-12} Surprisingly, the severity of BS in teachers has exceeded that in health care workers,^{13,14} and this condition has a negative impact on the educational environment because it interferes with the achievement of pedagogical objectives and quality of education.¹⁵ Although there are reports of BS in teachers, few studies have evaluated university professors.¹⁶

Therefore, conducting research at national level is required to develop a theoretical basis for the creation and optimization of strategies for coping with BS in this professional category. Within this context, this study investigated the prevalence of BS in university professors working in Salvador, Brazil, and possible risk factors.

METHODS

This cross-sectional, multicenter, epidemiological study was conducted in Salvador, state of Bahia,

Brazil, from May to December 2019. The investigation was approved by the Research Ethics Committee of Climério de Oliveira Maternity Unit at Universidade Federal da Bahia (UFBA), with approval number 3.296.479. All participants signed an informed consent form.

Sample size calculation was based on a criterion of 15 cases for each independent variable (predictor).¹⁷ Thus, according to Pallant,¹⁷ the sample should consist of at least 180 participants. The study included a total of 210 university professors working in Salvador, which meets the assumptions of the consulted literature. Data were collected at both public and private universities in Salvador based on convenience sampling. The inclusion criteria were being a Brazilian professor, working in Salvador, and having at least 1 year of teaching experience. The exclusion criteria were being on sick leave or maternity leave and teaching distance learning courses.

To determine the level of emotional exhaustion in university professors, a questionnaire adapted from the Maslach Burnout Inventory (MBI), considered the gold standard for detecting BS,¹⁸⁻²⁰ was administered together with a sociodemographic questionnaire. Participants were approached in their workplaces during the break and mostly in the faculty lounge. First, the research objectives, the informed consent form, the commitment to confidentiality of all information, the voluntary nature of participation, and the possibility of withdrawing at any time were explained verbally. Professors who agreed to participate in the study and signed the informed consent form were given the adapted MBI questionnaire and the sociodemographic questionnaire for self-completion. Presence or absence of BS was estimated by the sum of points in the adapted MBI questionnaire. A score equal to or greater than 40 points was considered to be a cutoff point for presence of BS.^{8,21}

The responses were coded, typed, and processed in an Excel® spreadsheet. Then, the data were analyzed with the aid of GraphPad Prism (GraphPad, San Diego, CA, USA). To compare the differences between the variables, all quantitative variables were categorized, and the differences between proportions and adapted MBI scores were tested with the chi-square test. The significance level was set at 5% ($p < 0.05$).

RESULTS

The study included 210 university professors working in Salvador. As shown in Table 1, of the 210 professors who completed the questionnaires, 115 (54.8%) were female and 95 (45.2%) were male. Most respondents were married (50.9%), had no children (46.7%), and were between 31 and 40 years old (50%). Most participants taught at more than one educational institution (58.1%), had more than 3 years of teaching experience (82.9%), had a master's degree (44.8%), taught humanities courses (55.2%), and had a weekly time load of 21 to 40 hours (50.5%) with a base salary higher than 5 minimum wages (45.7%). Also, 158 (75.2%) professors considered their working conditions to be adequate versus 52 (24.8%) who reported working under inadequate conditions.

The adapted MBI assessment showed that 86 professors (41%) had BS, considering a score equal to or greater than 40 as the cutoff point. A stratified analysis was then conducted based on the sex of the participants, in which a greater predominance of BS was found in female professors (45.7%) when compared to male professors (34.7%), as shown in Table 2. However, the statistical difference found between the groups ($p = 0.15$) was not significant, which demonstrates only a tendency for women to be more likely to develop BS (Table 2).

In a concomitant analysis of the age of the participants, greater likelihood to develop BS was found in younger professors. Professors under 30 and those aged 31 to 40 years had a prevalence of 50 and 49.5%, respectively, while those aged 41 to 50 and those over 50 years had a prevalence of 26.4 and 21%,

Table 1. Demographic data for participating professors (n = 210)

Variables	Results	
	n	%
Sex		
Female	115	54.8
Male	95	45.2
Age (years)		
≤ 30	14	6.7
31-40	105	50.0
41-50	53	25.2
> 50	38	18.1
Marital status		
Single	84	40.0
Married	107	50.9
Divorced	18	8.6
Widowed	1	0.5
Number of children		
0	98	46.7
1	53	25.2
2	41	19.5
> 2	18	8.6
Number of employers		
1	88	41.9
2 or over	122	58.1

Variables	Results	
	n	%
Time load (hours)		
≥ 20	55	26.2
21-40	106	50.5
< 40	49	23.3
Time working as a professor (years)		
< 3	36	17.1
3 or over	174	82.9
Main academic degree		
Specialist	47	22.4
Master's	94	44.8
Doctoral	69	32.8
Area of expertise		
Exact sciences	31	14.8
Humanities	116	55.2
Natural sciences	67	31.9
Base salary (minimum wages*)		
1 to 3	43	20.5
3 to 5	71	33.8
> 5	96	45.7
Working conditions		
Adequate	158	75.2
Inadequate	52	24.8

* Minimum wage was set at R\$ 998.00, the amount in effect in Brazil from January 1, 2019 to January 1, 2020, as granted in Decree No. 9.661.

respectively. The difference found between the different groups was statistically significant ($p < 0.001$), as shown in Table 2.

Marital status and number of children were also associated with presence of BS. A prevalence of 48.8% was observed in single professors, while married and divorced professors had a prevalence of 31.8 and 33.3%, respectively. The analysis of marital status proved to be statistically significant ($p = 0.02$), showing that single professors are more likely to develop BS. The analysis of number of children also showed statistical significance ($p = 0.007$). Those with no children had a prevalence of 48% versus 24.5, 34.1, and 38.9% for those with one, two, or three children or over, respectively (Table 2).

The analysis of labor variables revealed that number of employers and area of expertise were predictive

variables for BS in university professors. As shown in Table 2, university professors working at two or more institutions had a prevalence of 43.4%. In contrast, professors working at a single institution had a prevalence of 27.3%. The difference between the two groups was statistically significant ($p = 0.001$). The analysis of area of expertise revealed that university professors teaching natural sciences (prevalence of BS = 52.2%; $p = 0.002$) are more likely to develop the syndrome when compared to those teaching exact sciences (prevalence of BS = 29%) or humanities (prevalence of BS = 33.6%). In this study, no statistically significant associations were found between presence of BS and time load ($p = 0.64$), time working as a professor ($p = 0.13$), main academic degree ($p = 0.13$), base salary ($p = 0.15$), and working conditions ($p = 0.08$).

Table 2. Association of the prevalence of burnout syndrome between the sociodemographic and labor variables of interest (n = 210)

Variables	Prevalence of burnout			Variables	Prevalence of burnout		
	%	n	p-value		%	n	p-value
Sex				Time load (hours)			
Female	45.7	53/115	0.15	≤ 20	34.5	19/55	
Male	34.7	33/95		21-40	40.5	43/106	0.64
Age (years)				> 40	38.7	19/49	
≤ 30	50.0	12/24		Time working as a professor (years)			
31-40	49.5	47/95	< 0.001*	< 3	30.5	11/36	0.13
41-50	26.4	14/53		3 or over	40.2	70/174	
> 50	21.0	8/38		Main academic degree			
Marital status				Specialist	31.9	15/47	
Single	48.8	41/84	0.02*	Master's	44.7	42/94	0.13
Married	31.8	34/107		Doctoral	34.8	24/69	
Divorced	33.3	6/18		Area of expertise			
Widowed	0.0	0/1		Exact sciences	29.0	9/31	
Number of children				Humanities	33.6	39/116	0.002*
0	48.0	47/98	0.007*	Natural sciences	52.2	35/67	
1	24.5	13/53		Base salary (minimum wages*)			
2	34.1	14/41		1 to 3	37.2	16/43	0.15
> 3	38.9	7/18		3 to 5	46.5	33/71	
Number of employers				> 5	33.3	32/96	
1	27.3	24/88	0.001*	Working conditions			0.08
2 or over	43.4	53/122		Adequate	35.4	56/158	
				Inadequate	48.1	25/52	

* Represents statistically significant variables according to the chi-square test or Fisher exact test.

DISCUSSION

BS affects those who interact with other people to carry out their jobs, which is why it was initially investigated among health care workers.²² However, the perception of increased burnout symptoms in teachers was validated by several studies over time.^{13-17,21,23,24} The results of the present study validate, for the first time, the presence of BS in university professors working in Salvador. Also, age, marital status, number of children, number of employers, and area of expertise were found to be predictive variables for BS in university professors in Salvador.

We found that younger participants were more likely to develop BS. These data are consistent with the literature, given that younger workers are starting their careers and, therefore, are somewhat immature and have little professional experience, which makes them experience more frustrations until they learn how to deal with job demands.²⁵ Together with those factors, young people generally have little work experience, inadequate training, and lack of knowledge related to the risks of developing BS, thus making young age a risk factor for BS.^{25,26}

Another relevant aspect that can increase the probability of developing BS is the marital status of university professors, given that single participants were more likely to develop BS. Having a partner can be seen as a protective factor, since the partner provides support, security, and encouragement for the person to cope with work-related stressors.^{25,27} The group of childless professors was also more likely to develop BS. These findings are in line with those of previous studies, which showed that workers who have children have lower levels of emotional exhaustion.^{27,28} This is explained by the parents' contentment with their children and the feeling of empowerment produced by the children's achievements.²⁸ Additionally, handling children requires the development of skills to manage

conflicts and greater emotional stability, which can be applied to the professional environment.²⁸

For labor variables, we found a positive association between development of BS and number of employers the professor has. Because of low pay, many professors work at more than one institution, which results in longer travel times, greater effort to adapt to different environments, and preparation of different teaching materials to meet the unique demands of each institution, which leads to greater physical and psychological overload in these workers.²⁹ This was validated by Suda et al.,³⁰ who found a positive association between development of BS and increased musculoskeletal pain and decreased general health level in university professors.³⁰ Finally, we found greater likelihood for developing BS in university professors teaching natural sciences. Involvement with scholarly work induces health professors to a constant search for greater scientific productivity, which favors the development of BS and other occupational diseases.¹⁶

CONCLUSIONS

In view of the 41% prevalence of BS among university professors participating in the present study, our conclusion is that university professors in Salvador are at risk of developing BS. In this study, young, single, and childless professors were found to represent groups more likely to develop BS. Moreover, this paper demonstrates that professors teaching natural sciences and working at more than one institution are more likely to develop BS.

However, the results should not be generalized, since these data are derived from institutions located exclusively in Salvador and, therefore, do not necessarily apply to other locations or professional categories. Therefore, we hope that this study will serve as a theoretical basis for the development of strategies that contribute to preventing BS in university professors.

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