

# SÍNDROME DE BURNOUT EM ESTUDANTES DE MEDICINA DE UMA UNIVERSIDADE PÚBLICA DA REGIÃO SUL DO BRASIL

## BURNOUT SYNDROME IN STUDENTS OF MEDICINE OF A PUBLIC UNIVERSITY OF THE SOUTH REGION OF BRAZIL

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### Resumo

Verificar se existe preenchimento dos critérios para o diagnóstico da síndrome de burnout e sua correlação com variáveis sociodemográficas em alunos do 1º ao 4º ano do curso de medicina da Universidade Estadual do Oeste do Paraná – UNIOESTE, *campus* de Francisco Beltrão é o objetivo deste estudo. Trata-se de um estudo quantitativo, descritivo, de caráter transversal, realizado com 126 acadêmicos. Para coleta de dados foi aplicado a escala MBI-SS adaptada por J. Maroco e M. Tecedeiro (2009) e um questionário sociodemográfico. Atingiram escores positivos exaustão emocional, descrença e diminuição da eficácia 39,68% (n = 50), 35,71% (n = 45) e 34,12% (n = 43) dos alunos, respectivamente. Fecharam critério para a síndrome de burnout 6,34% dos acadêmicos do curso de medicina. A análise das questões isoladas correspondentes às três características da síndrome também revelou dados significativos. Os resultados apontaram uma média significativa para o subitem exaustão emocional, considerado o primeiro a apresentar evidência e indicativo de potencial risco de desenvolver a síndrome. Descrença e diminuição da eficácia também evidenciaram índices importantes e por isso não devem ser negligenciados.

**Palavras-chave:** Esgotamento Profissional; Estudantes de Medicina; Fadiga; Universidades.

### Abstract

To verify if there is criteria fulfillment for burnout syndrome diagnosis and the correlation with sociodemographic variables in students from the medical course, 1st to the 4th year of the State University of the West of Paraná - UNIOESTE, *campus* of Francisco Beltrão, is the aim of this study. It is a quantitative, descriptive and transversal study carried out with 126 scholars. Data collection was performed using the MBI-SS scale adapted by J. Maroco and M. Tecedeiro (2009), and a sociodemographic survey. 39.68% (n = 50), 35.71% (n = 45), and 34.12% (n = 43) of the students respectively achieved positive score for emotional exhaustion, disbelief and decreased efficacy. 6.34% of the medical school students closed criterion for burnout syndrome. The analysis of the isolated questions matching the three syndrome features also revealed significant data. The results indicated a significant mean for the emotional exhaustion sub-item, considered as the first to present evidence and indicative of potential risk for the syndrome development. Disbelief and decreased efficacy also showed important indices and should not be neglected.

**Keywords:** Professional Exhaustion; Medical students; Fatigue; Universities.

## **Introduction**

The term "burnout" is defined as ceased function due to absolute lack of energy, and which reached its limit <sup>(1)</sup>. The burnout syndrome can be characterized as a state of physical exhaustion and mental problems associated with perceptions of excessive demands, lack of enthusiasm, and feelings of frustration or cynicism due to reduced performance <sup>(2,3)</sup>. It is divided into three dimensions: emotional exhaustion, depersonalization or cynicism, and reduction of personal fulfillment <sup>(4)</sup>.

According to Maslach et al. <sup>(5)</sup>, emotional exhaustion results from emotional and physical overload. It is central and most widely manifested dimension of the syndrome. Disbelief (also called cynicism or depersonalization) is the attempt of becoming distant from others in order to deal with the heavy assignment, resulting in increased cynicism or apathy. Cynicism, in turn, may be associated with ignorance about the problems and need of the clients or patients with focus on rational aspects. The third dimension or reduction of efficacy manifests itself in feelings of unhappiness, dissatisfaction with their achievements and negative self-assessment,

especially with regard to their quality and quantity of work <sup>(3)</sup>.

According to Truzzi et al. <sup>(4)</sup>, burnout is generally observed as a psychosocial syndrome which appears in response to chronic and interpersonal stressors in the workplace. Although most of the studies relate burnout syndrome to employment context, it may already appear in academic phase, as a result of the intense study and exposure to various fatigue factors <sup>(6,7)</sup>. Repercussions of this psychological stress can affect the student professional behavior, leading to dishonesty and lack of empathy <sup>(8,9)</sup>.

Studies show that medical students are more overloaded by disorders associated with stress than the general population <sup>(2,9)</sup>. According to Mori et al. <sup>(10)</sup>, the pressure to show their own value to themselves and also to third parties is great for undergraduate medical students. In this attempt to stand out, these students may fall victim to burnout.

It is relevant that the troubles hamper the students learning should be scaled up, and later, to adopt behaviors that optimize this process of knowledge acquisition, as well to minimize the disease symptoms. In this way, students can be expected to have better

conditions to explore and develop their potentials in a healthy way, preserving their well-being, so they can have the necessary competence to take care of a greater good, that is, human life and health.

This study aimed to verify the existence of burnout syndrome evidence in medical students of the State University of West of Paraná - *campus* of Francisco Beltrão.

## **Methods**

### **Ethical aspects**

The research was approved by the Committee of Ethics in Research with Human Beings (CEP) of the State University of the West of Paraná on October 10<sup>th</sup>, 2017, according to assent number 2,324,271. Prior to the application of the survey, participants were asked to read and sign the Free and Informed Consent Term (TCLE).

### **Design, study site, period and sample**

This is quantitative, descriptive, cross-sectional study carried out from October to November 2017, with an interval of at least one week before or after evaluations. The study population was composed by students enrolled in the first to fourth year of medical course of the State University of the West of Paraná

(UNIOESTE) - *campus* of Francisco Beltrão.

The sampling cut was randomly established for convenience, stratified by year of the course. From 160 students enrolled in the 2017 academic year, 42, 44, 36 and 40 students were in the 1st, 2nd, 3rd and 4th years, respectively. Students who were under 18 years of age, those who refused to answer and those who answered the survey partially were excluded.

The students were approached in the classroom before starting the classes or during breaks. At that moment, a brief presentation of the project was made and those who accepted to be part of the sample signed TCLE and then answered questions.

From 160 students enrolled, 134 were in the classroom and answered the survey. From these, eight were disregarded because they fit the exclusion criteria, being included in study, therefore, 78.75% of the population.

### **Instruments**

An individual questionnaire was used to collect socio-demographic information, containing the following variables: gender; age, year of the course and family income. For identification of burnout syndrome signs we used the Maslach scale for students - *Maslach Burnout Inventory - Student Survey* (MBI-SS)

adapted by Maroco and Tecedorio <sup>(11)</sup>, consisted of 15 questions that are subdivided into three subscales: Emotional Exhaustion (EE) composed by 5 items, Disbelief (DE) composed by 4 items and Professional Efficacy (EP) composed by 6 items. All the affirmatives was evaluated by the Likert scale 0-6 (0 = never, 1 = almost never/a few times a year, 2 = sometimes/once a month, 3 = regularly/few times a month, 4 = many/once a week, 5 = almost always/a few times a week, 6 = always/every day). Statistically, the data were processed using the SPSS<sup>®</sup> software (*Statistical Package for Social Science*) version 18.0.

### **Data analysis**

To identify burnout syndrome, the MBI-SS scale does not allow a global score, but rather the use of percentiles. Relatively it is group, an individual is diagnosed with burnout if he/she is simultaneously above the 66 percentile of exhaustion and disbelief, and below the 33 percentile of effectiveness scores. Thus, in this study, those who had values greater than or equal to 24 and 15 for exhaustion and disbelief respectively and less or equal to 18 for effectiveness resulted in positive scores.

To evaluate the correlation between variables, the Pearson index was calculated. Correlations significantly different from zero (level equal of or less than  $p < 0.05$ ) were the objects of analysis.

## **Results**

### **Burnout syndrome**

When analyzing the scores greater than 24 for exhaustion and greater than 15 for disbelief (percentile 66) and less than 18 for efficacy (percentile 33), it was found that eight students (6.34%) meet the criteria for burnout syndrome, that is, they have the three criteria at the same time.

Regarding the dimensions of the syndrome, we found 50 students (39.68%) who fulfilled the diagnostic criteria for emotional exhaustion, 45 (35.71%) who identified themselves with situations of disbelief and 43 (34.12%) who had low efficacy. The means of responses in each affirmative for three dimensions of burnout were 4.16 for exhaustion (SD = 0.46), 2.92 for disbelief (SD = 0.13), and 3.42 for efficacy (SD = 0, 65).

The analysis of isolated statements corresponding to three characteristics of the syndrome also revealed significant data. In

relation to emotional exhaustion, all mean responses were above three (greater than neutrality), reaching as high as 4.5. In relation to the standard deviation, we can see values varying from 1.41 to 1.66, indicating, therefore, a significant disagreement between the participants. The question with the highest percentage of answers "enough times", "almost always" and "always" was "I feel 'beat' at the end of a day at university", with 78% (n = 98). The first question that states "my studies leave me emotionally exhausted" with 77% (n = 97) reached close value. 68% of the participants said they feel tired in the morning when they think they have to face a day at university (n = 86), and 67% feel completely exhausted by the studies (n = 84). Expressively, 47% of the students (n = 60) realize that studying or attending a class makes them tense at least once a week.

"Disbelief" obtained smaller means, between 2.75 to 3.08. Despite, 35% of the students (n = 45) have become disinterested in studies since they entered the university, and 38.8% (n = 49) report feeling unenthusiastic about the studies. 38.8% of the students answered that they felt increasingly cynical about the potential usefulness of their studies,

and 39.6% (n = 50) have doubts about the meaning of their studies.

In the evaluation of the professional effectiveness decrease, students with indications of been affected by the syndrome would have lower scores, so the response options considered were "never," "rarely", and "sometimes." 35% of students (n = 43) had any of these three options on the issue, "I can address effectively the problems that result from my studies", and 40% (n = 50) followed this trend in the statement, "I believe I take part in a positive way in the classes I attend". 31.7% of the students (n = 40) stated they never, almost never, or sometimes feels like good student. 61% (n = 77) also answered negatively about being able to follow up the subjects effectively during the classes, with this assertion being the lowest average and the second lowest standard deviation of this dimension, reaching 2.73.

### **Burnout syndrome and the participants' profile**

From the 126 students in the sample, 58% (n = 73) were female. All the characteristics that make up the burnout syndrome were more frequent in women (n = 6), representing 75% of the individuals who fall

into the syndrome. Analyzing the separate dimensions, it was verified that 62% of them presented emotional exhaustion, 55% presented disbelief, and 43% decreased effectiveness.

64.3% (n = 81) of the students interviewed fitted the age group from 21 to 25 years old, and those most affected by exhaustion. About 9% (n = 11) were between 26 and 30 years old, and what affected them most was decreased efficacy, occurring in 45.4% of these students. 25.3% of participants (n = 32) were aged between 18 and 20 years old, age group with the most frequency of the syndrome (9.4%; n = 3).

In relation to year of the course, it was verified that in the second year students were more exhausted (43%), more disbelieving (54%) and less effective (54%) than the others. Students in the first year had similar rates of exhaustion (37%), disbelief (34%), and decreased efficacy (34%). Despite lower percentages of disbelief (18%) and reduced efficacy (22%), the third year had a high rate of exhaustion (41%). Exhaust, disbelief and effectiveness corresponded, in the fourth year, to 40%, 36%, and 34%, respectively. From the eight students who had burnout syndrome, three were in the first year, two were in second, and

three were in fourth year. Proportionally to the number of participants, the first year showed the highest rate (9.3%), followed by the fourth (7.6%), and second year (7.1%). In the third year no student fulfilled the criteria for the syndrome.

Regarding the economic situation, the students with a monthly family wage range of up to 5 minimum wages were the ones that showed the highest rates of exhaustion and decreased effectiveness. In contrast, the lowest perception of disease characteristics occurred in the students with a family income of up to three minimum wages. The assessment was based on the minimum wage of 2017 (R\$ 937.00).

Statistically analyzing the data, using Pearson's correlation coefficients, no significant correlation was found between sociodemographic variables and those related to burnout syndrome.

Data on sociodemographic variables and their relationship with the disease variables are discussed in more detail in Table 1.

**Table 1** – Absolute and relative frequency of students with scores for emotional exhaustion, disbelief, professional efficacy and Who meet the criteria for burnout syndrome in relation to sociodemographic variables.

Variables	n	Exhaustion		Disbelief		Efficacy		Burnout	
		n	%	n	%	n	%	n	%
<b>Gender</b>									
Male	53	17	23,28	16	21,91	21	28,76	2	2,73
Female	73	33	62,26	29	54,71	23	43,39	6	11,32
Total	126	50	39,68	45	35,71	44	34,92	8	6,35
<b>Age</b>									
18-20	32	11	34,34	13	40,62	13	40,62	3	9,37
21-25	81	36	44,44	30	37,03	26	32,1	5	6,17
26-30	11	2	18,18	2	18,18	5	45,45	0	0
31 or more	2	1	50	0	0	0	0	0	0
Total	126	50	39,68	45	35,37	44	34,92	8	6,35
<b>Year of the course</b>									
1°	32	12	37,5	11	34,37	11	34,37	3	9,37
2°	28	12	42,85	15	53,57	15	53,57	2	7,14
3°	27	11	40,74	5	18,5	6	22,2	0	0
4°	39	15	38,46	14	35,9	12	30,76	3	7,6
Total	126	50	39,68	45	35,37	44	34,92	8	6,34
<b>Family income</b>									
Less than 3	8	2	25	2	25	1	12,5	0	0
Less than 5	20	5	55	5	25	9	45	0	0
5,1 - 10	63	28	44,44	25	39,68	21	33,33	6	9,52
Greater than 10	35	9	25,71	13	37,14	13	37,14	2	5,71
Total	126	50	39,68	45	35,71	44	34,92	8	6,35

## Discussion

According to Schaufeli et al. <sup>(12)</sup>, burnout syndrome among students can be characterized as a state of emotional exhaustion, due to intense study requirements, disbelief perceived by lack of enthusiasm and low professional effectiveness, feeling frustrated due to reduced performance in studies.

Some studies available in the literature had obtained very high rates of Burnout. In a meta-analysis conducted by Erschens et al. <sup>(2)</sup>, for instance, rates of up to 75% of burnout in medical students were confirmed. Ishak et al. <sup>(13)</sup> report that at least half of all medical students may suffer from the syndrome during the period of their training. Another study, conducted by Viana et al. <sup>(14)</sup>, exposed the prevalence of burnout syndrome in 65.1% of Health Sciences students.

Comparing only the final numbers of this study with the aforementioned studies, without considering the methodology, a prevalence of the syndrome was detected in this study with 6.34%, just lower than the results. However, when considering the reasons for such difference, some assumptions arose. One of them would be in relation to the instrument

used, because the MBI-SS scale does not show global overall score of burnout, which has been indicated as one of the main limitations on the use of the scale <sup>(15)</sup>. Thus, small changes in cut-off points may lead to a significant change in instrument sensitivity. Another hypothesis is in line with what Maslach and Jackson pointed out <sup>(3)</sup>, that the development of burnout may be being avoided thanks to still satisfactory rates of professional effectiveness.

It may be considered that the sample was small enough to achieve significant results. Besides that, many students did not attend classes

the days when the questionnaires were applied. In the first year, for example, 10 students were missing (24% of the class). Would these missing students be overwhelmed, affected by exhaustion, disbelief or decreased effectiveness and so did they not go to the University? This question can only be answered with further studies on the subject.

From another viewpoint, when compared to other works that used a similar methodology, one can perceive close rates. Chagas et al. <sup>(16)</sup> noticed 11.4% of the students affected by the syndrome, Costa et al. <sup>(17)</sup>, 10.3% of the participants, Mori et al. <sup>(10)</sup>,



20.4%, and Vieira et al. <sup>(18)</sup> did not detect any student with burnout in their study.

Moreover, the separate analysis of burnout dimensions revealed high rates of emotional exhaustion, with 50 students presenting this characteristic (39.68%). It should be pointed out that this was the central dimension, the most widely expressed by burnout and the first to appear <sup>(2)</sup>. It was found that the mean of exhaustion in this study (4.16; SD = 0.46) was higher than in the studies of Vieira et al. <sup>(18)</sup> who had an average of 2.58 (mean score 12.19), by Aguiar et al. <sup>(19)</sup> with a mean of 3.70 (mean score 18.51) and Mori et al. <sup>(10)</sup>, with 3.42. It was smaller, however, than in the study by Chagas et al. <sup>(16)</sup>, with 4.32.

Additionally, 35.71% of the students had exceeded scores the disbelief cutoff point. The mean 2.92 (SD = 0.13) of this sub item obtained in this research was also higher than in the studies of Vieira et al. <sup>(18)</sup>, with 1.18 (mean score 4.76), by Aguiar et al. <sup>(19)</sup> with 2.10 (mean score 8.41) and Mori et al. <sup>(10)</sup>, with 1.75. Compared to the work of Chagas et al. <sup>(16)</sup>, also obtained lower average in this topic.

Reduction of professional efficacy was felt by 34.12% of participants (n = 43). The mean of this element (3.42, SD = 0.65) was

lower than that of the four studies compared: Vieira et al. <sup>(18)</sup> with 3.92 (mean score 23.56), Aguiar et al. <sup>(19)</sup> with 4.25 (mean score 25.50), Mori et al. <sup>(10)</sup> with 4.00, and Chagas et al. <sup>(16)</sup> with 5.36.

All the features that make up the burnout syndrome in this study were more frequent in female subjects. From the eight individuals who fall into the syndrome, six of them (75%) are women. In agreement with these findings, the work of Chagas et al. <sup>(16)</sup> showed the female sex affected by the syndrome twice as much as the male one.

The age group that proportionally presented more students with the syndrome was from 18 to 20 years old. A similar result was reported by Chagas et al. <sup>(16)</sup>, that the younger student's age, the greater levels of emotional exhaustion and disbelief. These data were compatible with the difficulties of dealing with the distinct reality of the university world and with the fact that it is the initial moment of a decisive life project <sup>(18)</sup>. Following the same line of reasoning, it is possible to conclude why the first year showed, proportionally, the highest burnout rate (9.3% from those enrolled this year).

Regarding monthly family income, this study showed that 75% of students who presented burnout syndrome had a salary range of 5.1 to 10 minimum wages. The range with the highest rates of exhaustion and decreased efficacy comprises university students with monthly family income of up to 5 minimum wages. The lower perception of the disease features in university students with family income of up to three minimum wages.

## **Conclusion**

The results demonstrated high averages of emotional exhaustion, considered as the first dimensions to arise and potential future risk of developing the syndrome. There were also important rates of disbelief and decreased efficacy. From these data we conclude that pedagogical attitudes are necessary towards optimizing students learning. The disinterest and lack of enthusiasm for studies also require some intervention to make everyday life in the university more enjoyable. Measures to encourage academic effort should be analyzed, as well as attitudes involving unhealthy pressure should be avoided. This study contributes to support the promotion of preventive and supportive measures regarding

mental health care and academic achievement of medical students, both psychologically and pedagogically.

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