ORIGINAL ARTICLE

Burnout Syndrome in medical internship students and its prevention with Balint Group

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SUMMARY

BACKGROUND: *We intend to estimate the Burnout Syndrome prevalence and its associated factors among medical internship students at a public university in northeastern Brasil, besides investigating the Balint Group (BG) contribution in its prevention.*

METHODS: *We conducted a cross-sectional study in February/2018 with Medical Internship Students at the University researched. We applied a structured questionnaire developed by the authors about socio-demographic data, educational process with BG participation, and current psycho-emotional experiences, in addition to the Maslach Burnout Inventory – Student Survey (MBI-SS), for Burnout Syndrome screening. We performed descriptive data analysis, logistic regression, and cluster analysis.*

RESULTS: *A total of 184 students (98%) participated in the study, with a mean age of 25.9±3.9 years, of which 54.9% were men. The prevalence of Burnout Syndrome was 10.3% based on the three-dimensional criterion and 35.9% on two-dimensional criterion (Exhaustion and Cynicism); it was higher in those who thought about quitting the program (OR=2.14), were dissatisfied with the teaching strategies (OR=2.67) and their performance (OR=2.64) and made use of licit drugs (OR=2.37). The variables associated with Burnout Syndrome allowed individuals to be discriminated, classifying them into three subgroups. Burnout Syndrome prevalence decreased, and vulnerability factors were attenuated when there was a higher frequency of students participating in BG.*

CONCLUSIONS: *The prevalence of two-dimensional Burnout Syndrome was high, with factors associated with the educational process. Participation in BG was associated with a lower Burnout rate prevalence. Longitudinal studies should be conducted.*

KEYWORDS: *Students, Medical. Burnout, Psychological. Mental health. Education, Medical.*

INTRODUCTION

Medical training is quite complex, because important stressors, such as daily dealing with pain and death, associated with factors related to the personality of students, can contribute to mental health aggravations that are not always investigated during the program, such as Burnout Syndrome. This psychic manifestation of occupational stress is defined as a response, even though inadequate, to chronic stressors of the work/study environment[1].

Burnout may be described in students based on

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its three dimensions: emotional exhaustion (feelings of exhaustion caused by educational demands), cynicism (feelings of negativism, cynicism, and distant attitude in relation to study), low professional efficacy (feeling of incompetence as a student)[2].

Balint Group (BG) is a method used to deepen the understanding of the doctor-patient relationship and improve communication skills of professionals and students in the health care area, with a patient-centered approach. This tool can also contribute to the increase of satisfaction at work/study because the participants use frustrating experiences to reflect and, concomitantly, seek to develop alternatives to stressful situations, which could reduce the levels of Burnout Syndrome[3].

In medical programs with a traditional teaching method, it is during the internship that students experience more intensely the medical practice, making it a crucial period for the construction of their professional identity[4]. However, depressive symptoms were identified in this population[5], in addition to negative attitudes toward death and conflicting attitudes in relation to mental disorders[4].

Thus, research that favors the early detection of Burnout Syndrome among medical interns and seeks means of intervention and prevention, aiming at returning a well-prepared physician, including mentally, to the community is very relevant.

This study aims to estimate the prevalence of Burnout Syndrome and its associated factors among medical interns of a public university in the Northeast of Brasil, in addition to investigating the contribution of BG in its prevention.

METHODS

Study site

The medical program of the Federal University of Sergipe (UFS), on the Aracaju Campus, adopts a traditional model of teaching, with a duration of six years: the first two are the Basic Cycle of Health Sciences, the following two a Pre-Clinical Cycle, and the last two a Clinical Cycle, also called Internship. To promote the well-being of students and improve the doctor-patient relationship, the BG started being applied once again at the institution in June 2017 for interns in the Mental Health module, after some years of interruption due to a leave of absence of its moderator to pursue masters and doctoral degrees.

Study population

A study carried out with all the medical interns of the medical school searched. At the time of collection, there were 186 students enrolled, but two refused to participate.

Study design

A cross-sectional study from February 2018.

Data collection

The data were collected before theoretical internship classes since that was the time when there was a greater number of interns present. The students signed the Informed Consent Form, which was placed in a separate non-identified envelope, and completed the questionnaires with their identities preserved.

Instruments

We used two self-administered questionnaires.

The first was a structured questionnaire designed by the authors and tested in a previous study with a similar population from the same institution, comprising 26 pre-coded close-ended questions addressing sociodemographic characteristics, educational process, and current psychological/emotional experiences.

The second was the Maslach Burnout Inventory - Student Survey (MBI-SS), adapted and validated for the screening of Burnout Syndrome in students[2], whose Portuguese version also showed adequate reliability and validity[6]. The questionnaire assesses three dimensions of Burnout Syndrome by means of 15 items: five for emotional exhaustion, four for cynicism, and six for professional efficacy. Each item is quantified based on frequency by adopting a Likert scale ranging from 0 (never) to 6 (every day). The diagnostic criterion is a score above 14 in exhaustion, above 6 in cynicism, and below 23 in efficacy. Low-risk scores correspond to the sum below 10 in exhaustion, below 2 in cynicism, and above 27 in efficacy[7]. Another method of evaluation is two-dimensional, which uses only the Exhaustion and Cynicism dimensions[8].

In relation to the BG applied in the institution, each class has about ten students and meets once a week during ten consecutive weeks, the duration of the Mental Health module, and is mediated by a psychiatrist/psychotherapist trained as moderator of Balint groups.

Data Analysis

After entering the data collected into a statistics software, the population profile was characterized with descriptive statistics. Then, in order to identify the factors associated with Burnout Syndrome, a bivariate analysis was initially performed by calculating the gross OR. Then, the significant variables ($p<0.25$) were included in the logistic regression model. The final model contained only the independent variables that remained associated with the outcome after adjustment ($p < 0.05$), according to the likelihood ratio test.

Subsequently, we excluded questionnaires that were not fully answered and ran a multivariate analysis of groupings to evaluate the variables with greater capacity to discriminate between individuals, enabling them to classify them into three subgroups. We used F-statistic to determine the variables' discrimination capacity.

Ethical considerations

The study was approved by the Human Research Ethics Committee of the institution researched under CAAE 38995814.1.0000.5546 and conducted in accordance with ethical policies.

RESULTS

A total of 184 interns (98%) participated in the study, with an average age of 25.9+3.9 years, with a minimum of 21 and maximum of 46, 54.9% of which were males, 82.6% single, 74.5% living with relatives, 84.2% did not work in addition to studying, 70.1% with family income <10 minimum wages, and 37% had doctors in the family. More than half comes from the state capital, 13% from the interior of the state, 30.4% from other states.

As for the psychological/emotional factors, 16.8% make use of a psychiatric medication prescribed by a doctor, and the same number of students have a prior mental disorder diagnosed by a psychiatrist. In addition, 45.7% make use of legal psychoactive substances, 21.7% use illicit drugs, 61.4% practice physical activity, and 72.7% have experienced severe illness themselves or in a family member.

In relation to the educational process, 73.2% reported dissatisfaction with the teaching-learning strategies, and 85.3% claimed they do not receive emotional support as part of the program. Regarding academic performance, 75.4% of the students considered it satisfactory, while 14.7% said they had failed a discipline during the program. Although 98.4% expressed satisfaction with the choice of a medical career, 34.2% had thought of abandoning the program, and 36.4% said that the program was below their expectations.

Only 40.8% of interns believe that the BG contributes to medical training, and 39.1% do not believe it; however, only 28.8% declared to participate or have participated in it.

The prevalence of Burnout Syndrome was 10.3% base on the three-dimensional criterion and 35.9% based on the two-dimensional. After evaluating each dimension, we found a high level of emotional exhaustion in 53.3% and high cynicism in 52.2%. However, low professional efficacy corresponded to 19% (Table 1).

In the logistic regression, we used the two-dimensional criterion of Burnout Syndrome due to the adequate number of subjects. The variables that showed a strong association with the syndrome are presented in Table 2. The presence of Burnout Syndrome was 2.67 times higher in those who were dissatisfied with the teaching strategies and 2.64 times higher in those dissatisfied with their academic performance. The desire to abandon the program (OR=2.14) and the use of licit drugs (OR=2.37) also showed a significant correlation with two-dimensional Burnout Syndrome.

It was not possible to verify the correlation between lack of emotional support and presence of

TABLE 1. PREVALENCE OF BURNOUT SYNDROME AND LEVELS OF EACH DIMENSION* AMONG MEDICAL INTERNS OF UFS. ARACAJU - SE, BRASIL, 2018

	n=184	%
Burnout Syndrome three-dimensional	19	10.3
Burnout Syndrome two-dimensional (Exhaustion and Cynicism)	66	35.9
Emotional Exhaustion		
Low (<10)	33	17.9
Moderate (10-14)	43	23.4
High (>14)	98	53.3
Cynicism		
Low (<2)	25	13.6
Moderate (2-6)	58	31.5
High (>6)	96	52.2
Professional Efficacy		
High (>27)	98	53.3
Moderate (23-27)	42	22.8
Low (<23)	35	19.0

*The scores of the levels of each dimension were based in Maroco & Tecedeiro (2009).

TABLE 2. RESULTS OF THE LOGISTIC REGRESSION ANALYSIS FOR VARIABLES ASSOCIATED WITH BURNOUT SYNDROME AMONG MEDICAL INTERNS OF UFS. ARACAJU - SE, BRASIL, 2018.

Variables	Gross OR	OR CI 95%	Adjusted OR	OR CI 95%	p
Thought of abandoning the program					
No	1				
Yes	3.26	1.72-6.18	2.14	1.06-4.31	0.033
Perception of academic performance					
Satisfactory	1				
Unsatisfactory	3.95	1.95-7.98	2.64	1.23-5.67	0.013
Satisfaction with teaching strategies					
Yes	1				
No	3.29	1.48-7.32	2.67	1.14-6.23	0.023
Use of a licit psychoactive substance					
No	1				
Yes	2.59	1.39-4.80	2.37	1.21-4.63	0.012

TABLE 3. RESULTS OF THE GROUPING ANALYSIS: SOCIODEMOGRAPHIC CHARACTERISTICS AND FREQUENCY OF VARIABLES ASSOCIATED WITH BURNOUT SYNDROME AMONG MEDICAL INTERNS OF UFS. ARACAJU - SE, BRASIL, 2018.

Variables	G1 (%) n=72	G2 (%) n=27	G3 (%) n=27	p
Mean Age (years)	25.8±2.8	25.7±2.4	25.3±3.6	
Gender				
Female	36.1	63.0	59.3	0.02
Male	63.9	37.0	40.7	
Participated in the Balint Group	40.3	55.6	18.5	0.019
Believe the Balint group contributes to medical training	50.9	56.5	25	0.08
Have two-dimensional Burnout Syndrome	25	40.7	55.6	0.014
Have three-dimensional Burnout Syndrome	5.6	7.4	22.6	0.039
Consider their academic performance to be satisfactory	97.2	96.3	0	0.0001
Declare to be satisfied with educational strategies	38.9	33.3	0	0.001
Thought of abandoning the program	0	100	59.3	0.0001
Use licit drugs	34.7	55.6	44.4	0.16

G1 – Group 1; G2 – Group 2; G3 – Group 3.

Burnout Syndrome, due to the insufficient number of subjects, but only 1.5% (1) of students with Burnout Syndrome reported having such support, in contrast with 22% of those without the Syndrome.

In the analysis of groups, after excluding questionnaires that were not completely answered, there were 126 remaining students (67.7%) with an average age of 25.7+3.1 years, with a minimum of 21 and maximum of 38, 53.2% of which were males, 82.5% were single, 54% from the capital, 67.5% with family income <10 minimum wages, 73.8% living with relatives, and 85.7% did not work in addition to studying. The variables associated with Burnout Syndrome allowed discriminating three groups (Table 3).

Group 1 presented the lowest prevalence of Burnout Syndrome and lower frequency of use of licit drugs and of desire to abandon the program; it also had a higher frequency of satisfaction with the academic performance and teaching strategies. Their frequency was higher in BG participation and in the belief that it contributes to medical training.

Group 3 presented the highest prevalence of Burnout Syndrome and lower frequency of BG participation and of the belief in its contribution to the program. Nobody showed satisfaction with the educational strategies, and all were dissatisfied with their academic performance. The use of licit drugs and the desire to abandon the program had high rates.

Group 2 presented the highest rate of students who use licit drugs, and all of them thought about quitting the program. However, the prevalence of Burnout Syndrome was intermediate, there was a high rate of good academic performance, and intermediate frequency in satisfaction with the teaching strategies. We noted the highest frequency of BG participation, as well as of the belief in its contribution.

DISCUSSION

The prevalence of Burnout Syndrome was 10.3% based on the three-dimensional criterion, the same value found by Oliva-Costa et al.[1] In 2009, but lower

than the national estimate (13.1%)[9]. In other Brazilian medical schools, the rates were even higher among their answered 1st to 4th-year students, a total of 19.6% in a public university in Bahia and 26.4%[10] in a private one from São Paulo[11]. Based on the two-dimensional criterion, the prevalence was 35.9%, consistent with the literature, which describes values of 37.4%[1] to 44.9%[11].

After evaluating each dimension, we noticed high rates of emotional exhaustion and cynicism, but lower rates in reduced professional efficacy. The same was described by other authors[1,10], suggesting that a high level of professional efficacy can compensate for the stress of academic life in medical students.

Most factors found to be associated with Burnout Syndrome refer to the educational process, as described in other studies[1,12] whereas the association between Burnout Syndrome and the use of licit drugs was reported in medical residents, with the increased use of alcohol associated with high levels of Burnout Syndrome, depression and perceived stress[13].

We found no significant association between Burnout Syndrome and the sociodemographic data, like another study that found no difference between genders when it came to Burnout Syndrome[14]. However, some researchers have found an association of gender with two of the Burnout Syndrome dimensions[15].

In our study, we were unable to verify the correlation between lack of emotional support and the presence of Burnout Syndrome due to the insufficient number of subjects, but one study revealed social support as an important moderator of educational stressors[12].

Based on the cluster analysis, the data shows that when there is a higher frequency of BG participation, there is a lower prevalence of Burnout Syndrome. Furthermore, non-participation was associated with lower academic performance and greater dissatisfaction with teaching strategies, variables that are significantly associated with Burnout Syndrome, whereas a higher frequency of participation is associated with the improvement of these factors.

We also noted that even when other variables that are significantly associated with Burnout Syndrome (thinking of abandoning the medical program and use of licit drugs) are present with a high frequency, the Burnout Syndrome prevalence is moderate when there is greater BG participation. This suggests that the BG interferes directly in the educational factors associated with Burnout Syndrome and mitigate vulnerability factors; therefore, it could be a resource for protection against the syndrome.

The association between BG participation and lower levels of Burnout Syndrome has already been demonstrated in doctors[3], but we did not find other studies that addressed this topic in students before our study. The studies found are on the increase of empathy and of the understanding of the doctor-patient relationship in this population[16-18]. Now, our results are added to these, showing the beneficial effect of BG in medical schools.

The limitations of this study refer to its cross-sectional design and that it analyzes exposure and effect at the same time, so it is not possible to assign causation to the associations found. However, we were able to identify potential associations that can contribute to the planning of preventive measures relating to the psychological symptoms reported.

CONCLUSIONS

The prevalence of Burnout Syndrome was high based on the two-dimensional criterion and factors related to the educational process. BG participation was associated with a lower prevalence of Burnout Syndrome and the mitigation of vulnerability factors. However, further studies in populations with similar profiles, including longitudinal studies, may strengthen our findings.

Our research contributes to raising awareness among the academic community about their important role in the promotion and maintenance of physical/mental health and in the prevention of Burnout Syndrome, as well as in relation to the use of Balint groups as a possible protective factor against injuries to the mental health of medical students, so it can be replicated among other classes of this medical school and others with similar profiles.

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Author contributions

Dâmaris Calcides, Rayssa de Nóbrega Didou – Responsible for data collection, analysis, and interpretation, as well as drafting, reviewing, and giving final approval of the text.

Enaldo Melo - Responsible for the study design, analysis, and interpretation of data, as well as review and approval of the final text.

Edméa Oliva-Costa - Responsible for the conception and design of the study, as well as for the analysis and interpretation of data, review, and approval of the final text.

RESUMO

OBJETIVO: *Estimar a prevalência de Síndrome de Burnout (SB) e fatores associados entre os internos de medicina de uma universidade pública no Nordeste do Brasil, além de investigar a contribuição do Grupo Balint (GB) na sua prevenção.*

MÉTODOS: *Estudo transversal em fevereiro/2018 com os internos de medicina da universidade pesquisada. Aplicou-se um questionário estruturado elaborado pelos autores sobre características sociodemográficas, processo educacional com participação do GB e vivências psicoemocionais atuais, além do Maslach Burnout Inventory – Student Survey (MBI-SS) para triagem de SB. Realizaram-se análise descritiva, regressão logística e análise de agrupamentos.*

RESULTADOS: *Participaram 184 estudantes (98%), com idade média de 25,9±3,9 anos, sendo 54,9% do sexo masculino. A prevalência de SB foi 10,3% pelo critério tridimensional e 35,9% pelo bidimensional (Exaustão e Descrença), sendo maior naqueles que pensaram em abandonar o curso (OR=2,14), estavam insatisfeitos com as estratégias de ensino (OR=2,67) e com seu desempenho acadêmico (OR=2,64) e faziam uso de drogas lícitas (OR=2,37). As variáveis associadas à SB permitiram discriminar os indivíduos classificando-os em três subgrupos. A prevalência de SB diminuiu e fatores de vulnerabilidade foram atenuados quando houve maior frequência de estudantes participantes do GB.*

CONCLUSÕES: *A prevalência de SB pelo critério bidimensional foi alta, com fatores associados ao processo educacional. A participação no GB foi associada à menor prevalência de SB. Estudos longitudinais devem ser realizados.*

PALAVRAS-CHAVE: *Estudantes de medicina. Esgotamento psicológico. Saúde mental. Educação médica.*

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