CHAPTER 153

Burnout syndrome in medicine students: an integrative literature review

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ABSTRACT

Burnout Syndrome (BS) is a set of signs and symptoms of psychological origin, in which the individual presents, mainly, physical/emotional exhaustion, psychological exhaustion, depersonalization and low personal fulfillment. Professionals who maintain an intense work routine are more predictable to contract Burnout, including medical students among these individuals. The present article aims to evaluate the prevalence of risk factors as well as the consequences of Burnout Syndrome in medical students. The present study is an integrative literature review of a quantitative nature. PubMed and Medline were used as a database. The descriptors in Health Sciences (DeCS) were used: "medical students", "burnout syndrome" and "public health". Among the analyzed literature, it was noted that the prevalence of Burnout is approximately 50% among the academic environment. Of this total, 25 to 75% refer to intentions of dropping out of the course, suicidal ideation, caused by overload and emotional exhaustion. Among the analyzed sexes, the female is the one that suffers the most from this disease, women over 21 years old are targets of

mental exhaustion, depersonalization and worsening of health. Regarding the period of college, even if their academic performance is satisfactory, there is a prevalence of SB among students from the 1st to the 10th period. A high relationship between the Syndrome and lack of sleep has been demonstrated, which causes damage to physical and psychological well-being. To make the situation even worse, many use unhealthy habits, such as the use of sedative and psychoactive drugs, as well as energy drinks to feel capable of performing their academic tasks. In this sense, it is noted that medical students have a high probability of developing BS, due to high study hours, exhausting routine and feeling of helplessness, among other factors. Many of these academics have suicidal thoughts and emotional problems. In view of this, it is necessary to further study this theme in order to reduce or even end these sufferings.

Keywords: medical academics; burnout syndrome; public health.

1 INTRODUCTION

The word Burnout is said to be an English jargon, in which the individual does not present energy in its totality, was established in 1970, by Herbert Freudenberger, an American psychologist, responsible for characterizing the symptoms of professional burnout and conducting an extensive study on Burnout Syndrome (BS) (1,2).

With this, SB is configured as a set of feelings and sensations, such as emotional exhaustion, memory alteration, loneliness, depression, anger, tension, diminished empathy, excessive worry, sleep disturbances, headache, low back pain, and suicidal thoughts (1). It often occurs in professions that require direct contact with the population, especially in the health field (2,3)

This syndrome is described in the International Statistical Classification of Diseases and Health Problems, and is mentioned by the International Code of Diseases (ICD-11)(4).

SB is defined as a psychological syndrome, based on the social-psychological perspective, sustained by a tripod, in which there is first, the feeling of exhaustion of physical and emotional resources; second, emotional exhaustion; and third, the distanced reaction in relation to the people who must receive care - depersonalization - and, finally, the feelings of incompetence and loss of productivity, low personal accomplishment(5,6).

The Oldenburg Burnout Inventory (OLBI) and Copenhagen Burnout Inventory (CBI) analyze the psychic and behavioral instability to guide the diagnosis (7,8).

SB is diagnosed from the analysis of a tangle of "symptoms", the most used test is the *Maslach Burnout Inventory* (MBI), created in 1978 by Christina Maslach, which presents three essential pillars: "Emotional Exhaustion" (EE), "Depersonalization" (DP) and "Personal Accomplishment" (PA)(6).

Since the first one mentioned is characterized by the depletion of energy resources, depersonalization presents itself as a mental state that does not excel in affective dissimulation or even distance with feelings of indifference and, finally, low realization is due to the reduced level of self-knowledge of one's personal abilities in relation to the social environment (9).

Since this SB is common in health professionals, the incidence of cases has been increasing in the last years, among physicians and especially among medical students, due to the excess of tasks, high workload of studies, accumulation of functions, countless responsibilities, family detachment, among other factors, and this way, the symptoms mentioned above are present in this public(3).

A study done by the JAMA editorial, *"Physicians' Suicides and the* Reasons," in 1903, warned about the reasons for suicides among physicians in the United States. The study noted that suicide in the physician population far exceeded that of the general population. Furthermore, in a meta-analysis of 54 studies and 17,560 subjects, the prevalence of depressive symptoms in newly trained physicians entering residency was approximately 28.8% (CI = 25.3-32.5) (10).

Among medical students, the prevalence of suicidal ideation was 11.1% (CI 9.0- 13.7%) and the preponderance of depression and/or depressive symptoms was 27.2% (CI 24.7-29.9%). Stress and anxiety associated with the competitiveness of medical school may be a possible cause of suicidal thoughts and depressive/depression symptoms among the students in question(10).

In this sense, it can be noticed that medical students, especially those in the more advanced years, are more prone to develop Burnout when compared to students from other health areas, due to stressful study loads, limited time, feeling of helplessness, among other factors. Added to this, SB can have negative impacts on the work life of these future professionals, as these individuals can advance to cognitive deficits, damage their interpersonal and work relationships, in addition to impairing the possible future care of these professionals.

Thus, the present study aimed to: evaluate the prevalence of risk factors associated with Burnout Syndrome and its consequences in medical students regarding the period 2012-2022.

2 METHOD

This is an integrative literature review conducted between 2012 and 2022, by means of searches in the PubMed and Medline databases. The descriptors used according to DECS (Descriptors in Health Sciences) were: "medical students, "burnout syndrome, "public health". From this search were found 69 articles, later submitted to the selection criteria.

Inclusion criteria were: articles in Portuguese and English; published from 2012 to 2022 and that addressed the themes proposed for this research, studies of the type (correlative descriptive quantitative study, exploratory descriptive cross-sectional study, survey, systematic review and scoping review), available in full.

The exclusion criteria were: duplicate articles, articles available in abstract form, articles that did not directly address the studied proposal, and articles that did not meet the other inclusion criteria.

After the selection criteria, 20 articles remained, which were submitted to a thorough reading for data collection. The results were presented in tables and descriptively.

Through an exception, a study from 1903 was included, due to its high impact within the scientific community, JAMA journal.

3 RESULTS:

Table 1: Analysis of the results obtained.

Author	Year	Study Type	Results
Almeida et al	2016	Quantitative descriptive correlative study	Of the 376 students analyzed, 14.9% had Burnout Syndrome, and the great majority were women between 21 and 25 years old who had never failed academically.
Andrade et al	2019	Cross-sectional exploratory descriptive study	38.39% of the students had symptoms indicative of burnout, with a high level of depersonalization and emotional exhaustion, with emphasis on first-year students.
Bhugra et al	2021	Review systematics	It was identified that Brazil is one of the countries with the highest rates of people affected by symptoms characteristic of burnout syndrome, and that structural, occupational, environmental, and sociocultural factors are intrinsically related.
Calcides et al	2019	Survey	The study showed that 35.9% of the 184 interns analyzed were suffering from Burnout, and only 1.5% of the affected students had an emotional support network.
Carro et al	2021	Survey	Among the 522 students analyzed, 12.3% were affected by burnout, the great majority being women over 21 years old, with harmful sleeping habits and more than 30 hours of study per week.
Cazolari et al	2020	Survey	The students indicated low to moderate levels of burnout, being most evident in women between their third and fourth year of college, with a predisposition to mental exhaustion.
Chunming et al	2017	Systematic review	Most of the affected Chinese students were women in their third to fourth year of medical school, with impaired mental health and lack of family or academic support.
Correa-López et al	2019	Survey	28.25% of the students had criteria for the diagnosis of burnout, the majority being financially dependent 21-year-old women who had failed some academic subject.
Costa, et al	2012	Survey	10.3% of the 369 students analyzed fit the two-dimensional criteria.

Gaston-Hawkins et al	2020	Systematic review	The prevalence of burnout is approximately 50% among students, with students suffering from mental exhaustion, depersonalization, and worsening mental health since entering college.
Fares et al	2016	Systematic review	The prevalence of burnout among the studies analyzed ranged from 25% to 75%, which was associated with suicidal ideation, intention to drop out, academic overload, and emotional exhaustion.
Li et al	2021	Systematic review	The articles analyzed presented a prevalence of depersonalization, lack of personal accomplishment and emotional exhaustion. The incidence of Burnout Syndrome in China was similar to the Brazilian values.
Mori et al	2012	Survey	Students between the third and fourth year of the course presented the highest rates of burnout prevalence, with the majority having grades at the required average. However, even with adequate grades, these students possessed emotional exhaustion and disbelief.
Nassar et al	2021	In-Scope Review	The analyzed studies point to a higher prevalence in women and relate that sleep dysfunctions can affect physical and psychological well-being and facilitate burnout.
Prado et al	2019	Survey	Among the 81 students studied, there was a high rate of exhaustion and personal satisfaction, and the presence of sleep disturbances.
Ribeiro et al	2020	Survey	Among the 138 students analyzed, the majority used coping strategies such as "avoidance and skulking," distancing, and denial.
Rocha et al	2021	Survey	9.2% of 523 students matched the three-dimensional burnout criteria, 77% had poor sleep quality, and 10.4% of the affected students used hypnotics to induce sleep.
Rodrigues et al	2020	Survey	Most of the students with symptoms or diagnosed with Burnout Syndrome were women in their last years of college, who did not have a sense of achievement of their goals and felt that they were not performing academic activities efficiently.
Shresta et al	2021	Survey	There was a prevalence of 65.9% among the 239 students analyzed with emphasis on the first and fifth year of the course.

Vale et al	2021	Correlative multicenter, analytical study	Among the 511 students analyzed, 37% presented symptoms indicative of burnout. 54% reported harmful sleep routines, 8% used hypnotics, 30% used psychoactive drugs, and 69% used energy drinks. The great majority felt a lack of academic emotional support.

Source: author.

Among the selected articles, most presented a survey as a design. This strategy, which is a type of quantitative research, can be defined as a way to collect data and information from characteristics and opinions of groups of individuals. The year 2012 to 2021, having lower and higher prevalence in research, respectively, being possible to analyze the content and interpret the information relating to each study.

Regarding gender, data indicate that women between 21 to 25 years old that had never failed academically, had harmful sleep habits with more than 30 hours of weekly studies that affected physical and psychological well-being, having low to moderate levels of Burnout syndrome, second, being, more evident in female students between, the third and fourth year of college(11,12).

Considering that, within the period described above, most students, of both genders, had grades at the required average, however, even so such students had high levels of personal demand, causing wear and tear and dissatisfaction, most used coping strategies as a form of "escape and avoidance", detachment and denial, used hypnotics (sedatives) to induce sleep, as well as made use of psychoactive and energy drinks, to stay awake. Reporting a lack of academic emotional support (2,13).

The prevalence of burnout is approximately 50% among students, who suffer from exhaustion and worsening of mental health, depersonalization, from entering college to graduating. Among the studies analyzed, there was a variation of 25 to 75%, which were associated with suicidal ideation, intention to drop out of the course, academic overload and emotional exhaustion(11,14).

However, it was observed that, according to Brazil is one of the countries with the highest rate of people affected by symptoms characteristic of the burnout syndrome, and that structural, occupational, environmental and sociocultural factors are intrinsically related. The incidence of the syndrome in China was similar to the Brazilian figures, since the articles showed a prevalence of loss of personality, lack of personal accomplishment and emotional exhaustion. In summary, the work reports that the quality of life in medical students is considered deficient, in a negative correlation between burnout and satisfaction, that is, high indices of the syndrome associated with low indices of physical and mental well-being.

4 DISCUSSION

According to the survey data raised in the result it is valid to highlight that there is an important association between the prevalence levels of Burnout Syndrome in medical students and the sleep dysfunctions of 7 out of 10 of them evaluated (5,15) primarily related to women (5,15).

SB may also be concomitantly associated with the lack of an academic emotional support network(16,17) and/or family (18) and culminates, in a recurrent manner, in suicidal ideation and intention to drop out of the course (2,12).

It is also important to add that 3 out of 10 of the students evaluated with indications of burnout used psychoactive substances, and 7 out of 10 habitually used energy drinks (19).

The present study, in order to verify the high rates of burnout among medical students, highlighted the main risk factors predisposing to the syndrome, since they are modifiable factors, namely: sleep deprivation and sleep disorders, as well as structural, occupational, environmental and sociocultural factors that are intrinsically correlated in Brazil (15,19).

Considering that the Brazilian country is one of the countries with the highest rates of people affected by symptoms characteristic of burnout syndrome, the clarification of this syndrome, its risk factors and the impacts that affect social, academic and professional life, are indispensable and necessary components for a better understanding and coping with the syndrome(14).

Among the results presented, it can be inferred that most students diagnosed with SB, as well as the presence of characteristic symptomatology, were women, in an age range over 21 years old, with satisfactory academic performance index or who had failed in some curricular subject(17).

The evaluated academics presented harmful sleep habits, which can affect physical and psychological well-being, in a way that facilitates burnout; with net hours of study exceeding 30 hours per week, which comprises more than 8 hours of study per day, not counting the hours of classes (4,20).

Thus, there is a correlation between SB in women with impaired mental health, associated with exhaustion intrinsic to academic life and with emphasis on the first and fifth years of the course, these being the periods of highest prevalence for burnout; no databases of scientific studies sufficiently capable of explaining the high prevalence of Burnout in female medical students were found(14,18).

It is possible to evaluate that, in general, SB is associated in more than half of the students who suffer from mental exhaustion and depersonalization, from the moment they enter college, being more prevalent among first and fifth year students, even if the grades were within the average admitted by the educational institution. The prevalence of burnout among medical students was associated with suicidal ideation in up to 7 students out of 10 assessed, as well as intention to drop out of the course, academic overload and emotional exhaustion (9,14,21).

5 CONCLUSION

The present study deals with the contributing pillars to SB, which are derived from the excessive curricular activities, as well as the psychic emotional wear of the respective public evaluated. In this sense, it allows emphasizing that there is a predominance of women in the early stages of college with an age range of 21 years old who find themselves with their psychic capacities in borderline, which generates short-term damage in their student development and later in their work area.

Moreover, it is noted in this public that the emotional disturbance generates a cascade of feelings and consequently harmful actions to the people around them. Many of them have suicidal ideations, irritability, sleep disorders, and different food preferences in order to relieve this extreme stress "(or feeling of invalidity)". It is necessary that this theme be further discussed in order to reduce mutual suffering and the suicide rate in the country's population, specifically among medical students.

Therefore, it is noted that the data evaluated in this work highlight the need to dialogue with other psychiatric illnesses and comorbidities that are in association in more detail in new studies on this theme so that the diagnosis is made in a timely manner willing to offer early treatment and reduce the damage caused by psychic emotional instability.

In summary, the paper reports that the quality of life in medical students is considered deficient, in a negative correlation between burnout and satisfaction, that is, high rates of the syndrome associated with low rates of physical and mental well-being.

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