

Burnout syndrome in Odontology, Medicine and Nursing students: a literature review
**Síndrome de *Burnout* em estudantes de Odontologia, Medicina e Enfermagem:
uma revisão da literatura**

**Síndrome de *Burnout* en estudiantes de Odontología, Medicina y Enfermería: una revisión
de la literatura**

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Priscilla Sarmiento Pinto¹

Fabricia Mিকেle Rodrigues Nunes²

Debora e Silva Campos³

Rejane Haidee Borges Freitas⁴

Paulo Rogério Ferreti Bonan⁵

André Ulisses Dantas Batista⁶

This study aims to conduct an integrative review on the prevalence of Burnout syndrome and its associated factors in Odontology, Medicine and Nursing students. A research was conducted in the database PUBMED, with the descriptors: "Burnout syndrome" associated with "dental students", "medical students", "nursing students", and "health students", with no time restrictions. Researches resulted in 22 articles, from which, after reading and consideration of the inclusion criteria, 13 were selected. Burnout syndrome has been affecting students in the health field, especially when they have direct contact with the patient, requiring early interventions.

Descriptors: Burnout professional; Students health occupations; Public health; Student health services.

O presente estudo tem como objetivo fazer uma revisão integrativa sobre a prevalência e fatores associados ao *Burnout* em estudantes de Odontologia, Medicina e Enfermagem. Foi realizada busca na base de dados PUBMED, com os descritores: "*Burnout syndrome*" associados com "*dental students*", "*medical students*", "*nursing students*", e "*health students*", sem restrição de período. As buscas mostraram 22 artigos, os quais, após leitura e seguindo os critérios de inclusão, resultaram em 13 artigos selecionados. A síndrome de *Burnout* tem acometido estudantes da área de saúde, especialmente no momento de contato com o paciente, necessitando intervenções precoces.

Descritores: Esgotamento profissional; Estudantes de ciências da saúde; Saúde pública; Serviços de Saúde para Estudantes.

El presente estudio tiene como objetivo hacer una revisión integral sobre la prevalencia y factores asociados al *Burnout* en estudiantes de Odontología, Medicina y Enfermería. Fue realizada búsqueda en la base de datos PUBMED con los descriptores: "*Burnout syndrome*" asociados a "*dental students*", "*medical students*", "*nursing students*", y "*health students*", sin restricción de período. Las búsquedas mostraron 22 artículos, los cuales, después de lectura y siguiendo los criterios de inclusión, resultaron en 13 artículos seleccionados. El síndrome de *Burnout* ha afectado estudiantes del área de salud, especialmente en el momento de contacto con el paciente, necesitando intervenciones precoces.

Descritores: Agotamiento profesional; Estudantes del área de la salud; Salud pública; Servicios de salud para estudiantes.

1 Graduation student from the Odontology course at the Federal University of Paraíba (UFPB). ORCID: 0000-0002-2376-4383 E-mail: priscillasarmenop@gmail.com

2 Graduation student from the Odontology at UFPB. ORCID: 0000-0002-8035-2270 E-mail: fabrycia_mick@hotmail.com

3 Dental Surgeon. Specialist in Dental Prosthesis. Endodontics Specialist. Ongoing MS in the Post-graduation Odontology Program (PPGO) at UFPB. ORCID: 0000-0002-5579-8844 E-mail: deboracampos.dsc@gmail.com

4 - Nurse. Dental Surgeon. Ongoing MS in Odontology at the PPGO in UFPB. Nurse at the CAPS in Moreno, PE, Brazil. ORCID: 0000-0003-1891-396x E-mail: rejane.haidee@yahoo.com.br

5 Dental Surgeon. MS in Oral and Dental Pathologies. PhD in Stoma Pathology. Assistant Professor IV at the PPGO at UFPB. ORCID: 0000-0002-4449-4343 E-mail: pbonan@yahoo.com

6 Dental Surgeon. MS and PhD in Oral Rehabilitation. Associate Professor II in the PPGO at UFPB. ORCID: 0000-0003-1593-0174 E-mail: andreulisses@yahoo.com.br

INTRODUCTION

Stress is a physiological response of the organism when it is exposed to some type of challenge or demand. People put under emotionally charged events on a daily basis, especially those who always have intense contact with others who are in situations of vulnerability and are highly emotionally charged, such as physicians, nurses or teachers, or are in places where work and workloads are excessive, such as hospitals or schools, places which are frequently exposed to high levels of emotional stress^{1,2}.

The physical effects of work hours under high levels of stress may result in chronic musculoskeletal diseases, low self-esteem, anxiety or depression^{3,4}, and is frequently highlighted as cause for the early retirement of health professionals, such as dentists².

Recently, considerations on occupational stress have also included graduation students. The students in the health field also are under high levels of stress, which can come from the need of being successful in practice activities, evaluations, direct contact with patients, coexistence with professionals and workers, not to mention the uncertainties of a professional future or the pressure of high numbers of hours studying, characterized by high levels of perfectionism^{3,5,6}.

Such events may seriously affect the psychological health of the students, causing, in worst cases, the abandonment of the course⁷.

In the last decades, factors such as the demand to increase productivity have been generating more occupational stress, which increases the chances of disease in the population, even if they have a healthy lifestyle⁸. These stressful conditions lead to the Burnout Syndrome, which is characterized as a chronic emotional response to extreme stress due to situations experienced in daily activities, and manifests as a process of physical and mental exhaustion^{6,8}.

Initially, it was described as prevalent in professionals. However, recently, its concept

was broadened to include other occupational groups, such as the students⁵.

The most accepted definition of Burnout is based on Maslach's and Jackson's social-psychologic perspective.

This considers the syndrome as a reaction to the chronic emotional tension that comes from dealing excessively with people. It is a construct formed by three dimensions that are related, but independent of one another^{6,9}:

(a) emotional exhaustion: lack of energy and enthusiasm due to a feeling of resource depletion, to which frustration and tension can be added, as workers notice they are in no condition to spend more energy to deal with a customer or other people as they did before;

(b) depersonalization: emotional insensitivity, which leads the professionals to treat their customers, colleagues, and the organization itself, in a dehumanized way;

(c) diminution of the personal fulfilling sensation at work: tendency of the workers to give themselves negative evaluations, becoming unhappy and dissatisfied with their professional development, which leads to a diminution in feelings of competency and success, and of their capabilities of interacting with others.

An instrument that is very often used to evaluate the presence of Burnout in students is an adapted questionnaire, the Maslach Burnout Inventory - Student Survey (MBI-SS).

This instrument is made up of 15 questions that in turn are divided in three sub-categories. Exhaustion (5 items); Cynicism (4 items); and Professional Efficacy (6 items). All items are evaluated according to frequency, varying from 0 to 6, where 0 means "never", 1 "a few times a year or less", 2 "once a month or less", 3 "a few times a month", 4 "once a week", 5 "a few times a week", and 6 "every day". Results showing high means in Exhaustion and Cynicism and low Professional Efficacy are indicative of Burnout⁵.

The propagation of this syndrome has been frequently evaluated in professionals, as a consequence of their work throughout the years.

Recently, there has been a growing preoccupation in evaluating its appearance among students, especially in those from health courses. It is important to know their characteristics and the factors that may contribute to its prevention, or, when the syndrome is already installed, to establish policies of support to this specific population.

Therefore, this study aims to conduct an integrative review on the prevalence of Burnout syndrome and its associated factors in Odontology, Medicine and Nursing students.

METHOD

An integrative review was conducted, in which were included experimental and non-experimental researches with the following stages: theme identification, elaboration of inclusion criteria, edification of instruments to produce relevant data from the articles found, evaluation and analysis of pre-selected articles, and finally, interpretation and discussion of the results found¹⁰.

The research was conducted in 2017 in the database "PUBMED", using the following descriptors:

"Burnout syndrome AND dental students",
"Burnout syndrome AND medical students",

"Burnout syndrome AND nursing students",
and "Burnout syndrome AND health students".

The inclusion criteria for article selection considered: articles written in English, Spanish or Portuguese; articles that evaluated the prevalence of Burnout Syndrome and its associated factors in graduation students of Odontology, Nursing and Medicine; articles whose abstracts were available in the database; and articles accessible in their entirety.

RESULTS

At the end of the electronic research, and of a reading of the titles and exclusion of duplicated studies, 22 articles that were according to the inclusion criteria were selected to be read in their entirety, as shown in Table 1.

After the research, the remotion of duplicated articles and the reading them integrally, other articles were excluded¹¹⁻¹⁴ because they were not appropriate to answer the interests of this study. The results found after article selection are shown in Table 2.

Table 1: Articles found through each researched descriptor. 2017.

DESCRIPTOR	RESULTS
<i>Burnout Syndrome and dental students</i>	03
<i>Burnout Syndrome and nursing students</i>	03
<i>Burnout Syndrome and health students</i>	03
<i>Burnout Syndrome and medical students</i>	13

Table 2. Articles about Burnout Syndrome in graduation students of Odontology, Medicine and Nursing. 2017.

AUTHOR	DATE	COUNTRY	SAMPLE	BURNOUT SYNDROME PREVALENCE	RELEVANT RESULTS
JENNINGS ¹⁵	2009	United States	Determining possible causes of the Burnout syndrome in medicine students	Unspecified	The Burnout Syndrome in medicine students show dissatisfaction with the learning environment and the irrelevance of the work being done. Preventive and corrective strategies are suggested to improve both individuals and institution.
MAZURKIEWICZ et al. ¹⁶	2012	United States	86 medicine students.	71%	The prevalence was high in the studied population, and the Burnout was related to sleep deprivation.
MONTERO-MARIN et al. ¹⁷	2011	Chile and Spain	314 odontology students	The authors do not show the results of Burnout prevalence, only its individual dimensions.	It was found that graduation students who studied more than 40 hours a week were more overloaded, as well as those in the first year of the course. Those who did not receive scholarships were in the first year of the course and felt less emotionally distressed.
CAMPOS et al. ⁵	2012	Brazil	235 odontology students	17%	The Burnout syndrome was related to thoughts about giving up the course, to the performance in the course, and to the consumption of medication because of the need to study.
COSTA et al. ¹⁸	2012	Brazil	369 medicine students.	10.3%	The Burnout syndrome was related to dissatisfaction with the choice of graduation course and with the way subjects were taught, as well as to the lack of confidence in the development of abilities, the lack of pleasure in the course and the feeling of discomfort in academic activities.
BACKOVIC et al. ¹⁹	2012	Serbia	755 medicine students.	26.7%	A high level of stress was found, especially in female students, and when they have direct contact with the patients and autopsies. There was no difference between the genders regarding depersonalization and exhaustion.
PAGNIN et al. ²⁰	2013	Brazil	277 medicine students.	The authors do not show the results of Burnout prevalence, only its individual dimensions.	Among the motivations to choose medicine, there are some students who have been through diseases or witnessed them in their families, and these suffer more emotional distress. The students who are motivated by diseases were considered as a risk group for Burnout Syndrome, and a primary intervention would be needed for this group.

TOMASCHEWSKI-BARLEM et al. ²¹	2014	Brazil	168 nursing students	The authors do not show the results of Burnout prevalence, only its individual dimensions.	The syndrome itself was not found in the evaluated students, but changes in the variables that make it up. It is necessary to recognize what situations lead the students to emotional exhaustion, considering the specificities of their education environment.
SILVA et al. ²²	2014	Brazil	570 nursing students	24.74%	This study found a high percentage of emotional exhaustion, establishing a connection between Burnout and resistance. It was concluded, therefore, that resistant personalities protect the student from being affected by Burnout.
ASENCIO-LOPEZ et al. ²³	2016	Mexico	225 medicine students.	Basic studies: 94.1% presented mild Burnout and 2.8% presented moderate Burnout. Final years: 27.8% had moderate Burnout and 8.3%, severe.	Using two different scales (Unidimensional Student Burnout Scale for the first years of the course and the Maslach Burnout Inventory to the final years), some differences were found in the prevalence of Burnout. No association was found between Burnout syndrome and stress factors, indicating that academic demands are already enough to influence in the development of the syndrome.
MONTIEL-COMPANY et al. ²⁴	2016	Spain	533 odontology students	50.3%	The Burnout was more common in fourth year students, with no difference between sexes. When compared to the control group (medicine students), the sample of this study was shown to be more affected by the syndrome.
GALVÁN-MOLINA et al. ²⁵	2017	Mexico	323 medicine students	13.4% (severe) 28.2% (moderate)	More than 60% of the medicine students presented one or more psychopathologies, among which are Burnout disorders and an adequate tracking. The treatment of this population could prevent serious mental disorders.
VILLWOCK et al. ²⁶	2016	United States	138 medicine students	The authors do not show the results of Burnout prevalence, only its individual dimensions.	The impostor syndrome was associated to the female gender and to the exhaustion and depersonalization variables of Burnout, and the fourth year of course was associated to Burnout.

DISCUSSION

The Burnout syndrome is intimately related to psychological conditions, excessive stress and dissatisfaction, be it with the professional or academic life.

The professionals in the health area are the most affected due to their direct contact with other people, as are the students in the field, due to the pressure they are under to fulfil their activities and the clinical demands required by daily direct conviviality with the patients, increasing the exhaustion of individuals²⁷.

In a systematic literature review on the stress among graduation odontology students⁷, it was found that students affected by stress present certain signs and symptoms such as: anxiety, depression, psychological disorders, burnout, emotional exhaustion, low academic performance.

Dentistry is seen as one of the most stressful professions in the health field, and, in addition to that, the intensive interaction between dentist and patient can precipitate a state of "burnout", consisting of exhaustion, depersonalization and a feeling of lesser personal accomplishment^{5,7}.

The prevalence of Burnout in the populations of the studies varied immensely, from 10.3%⁵ to 71%¹⁶.

This can be initially explained by the use of different evaluation instruments, considering that the first study used the Maslach Burnout Inventory - General Survey (Students) (MBI-GS (S))⁵, while the other used the Maslach Burnout Inventory - General Survey (MBI-GS)¹⁶.

In addition to these, other instruments were used, such as the Unidimensional Student Burnout Scale (USBS)²³, and the Burnout Clinical Subtype Questionnaire (BCSQ-12-SS), adapted for students. That shows that there is no single standard to determine the prevalence of this syndrome in the studied population.

Additionally, many students found evaluated Burnout dimensions individually, not presenting the prevalence values of this alterations^{17,20,21,26}.

The comparison between the results of different articles was often difficult due to the

diversity of populations being studied, since these can have sociocultural differences that are difficult to evaluate objectively, not to mention differences in age, genders, cut-off points for the burnout diagnostic, etc.

Among the few studies that evaluated the prevalence of this syndrome in odontology students, Campos et al.⁵ indicated the prevalence of Burnout syndrome in 17% of the students investigate, while Montiel-Company et al.²⁴, who evaluated students from the third, fourth and fifth years of graduation, found a much higher prevalence (50.3%).

This higher percentage can be justified by the online distribution of questionnaires, that may have influenced answers. The most affected students may have been more motivated to answer, leading to an overestimation of the results²⁴.

The highest prevalence mean was found among students in the fourth year (73.7%) and can be explained by the fact that, in this period, there was a considerable increase in clinical experience; the lowest one, however (28.2%) was among students in the fifth year, who, in spite of having the same clinical experience than in the fourth year, might have developed mechanisms of psychological defense. The saturation of the stress could also have taken place in the last year of university²⁴.

Montero-Marin et al.(2011)¹⁷ found in their study that, the more hours studying, the highest the chance of students selecting the "overload" option, and, therefore, of having a more severe experience when it comes to exhaustion levels.

Students from the fifth year were the less prone to "overload" than those in the first year, considering that the fifth year is closer to the end of the university career. Soon, their studies would end, and they would have time to learn how to manage sources of stress.

A significant relation was found between the surfacing of Burnout syndrome and performance in the course, the consumption of medications to study and the possibility of abandoning the course. The most affected students were those with low performance (activities related to the course

become more tiring), those who consume medications to study and those who have thought about abandoning their graduation^{5,18}. Reports of feeling emotionally depleted by study, losing interest in studying, and cynicism towards one's own potential and the usefulness of what is being studied were also mentioned⁵.

There were no significant differences regarding sex^{5,24}, but male individuals were found to have lower Professional Efficacy mean results than women⁵.

This finding could be explained by the facts that women seek family help and support more frequently than men⁵, and that women are normally more rational in their choices of life priorities, in addition to receiving better support from society¹⁹.

Considering studies involving nursing students, 24.74% of participants were diagnosed as having the syndrome²². In a study by Tomaschewski-Barlem et al²¹, the students in the researched sample did not present Burnout. The syndrome, however, could be still in development, since these students presented high mean values when it comes to exhaustion.

Although this is a tridimensional syndrome, it is possible to suggest that exhaustion or emotional depletion is the first symptom to manifest^{21,22}.

Some nursing students presented a strong personality, with high levels of control, commitment and challenge, showing that they were controlling the stressful situation as opposed to being passive and impotent. Among these students, 68% did not present Burnout, which seems to be an element of protection and, presumably, its negative results²².

Nursing students that work and study presented a negative influence in the professional efficacy factor. On the other hand, students who do not work may be more cynic with regards to doubting the practical usefulness of theoretical knowledge. Those who have already worked may also feel less emotionally depleted, since they have developed better emotional strength through previous experiences²¹.

The thought of abandoning the course was found to be related to the feeling of cynicism regarding the usefulness of studying (the students could not understand the benefits that came from their efforts, which implies in a greater feeling of depletion as they performed their work) and to a smaller perception of professional efficacy. The feeling of professional efficacy was present in the younger students and could be related to their more idealized way to see the world²¹.

Leisure activities may favor communication, interpersonal relations, and the relief of tensions that are common during graduation, so that students feel more confidence and are more efficient in the performance of their activities²¹.

Different prevalences of Burnout among students from nursing and other graduation courses may be related to different academic contexts and functions conducted in each graduation²².

In the case of Odontology, for instance, financial factors related to the course, such as the high costs of instruments and materials, the specific nature of the work, including activities in very restricted spaces, such as the oral cavity, and the repetitive and often tiring positioning of the dentist, make it so the profession is stressful⁵. These factors also predisposes the worker to other physical issues, such as chronic musculoskeletal diseases, leading to an early retirement from professional life².

Studies involving medicine students often attributed the high prevalence of stress to their extensive workload, competitive environment contact with the experience of serious diseases, and the death of patients, all of which contribute to create a favorable environment for the burnout syndrome²⁰.

In a study by Costa et al.¹⁸, with Medicine students, the criteria for diagnosing the syndrome was met by 10.3% of students, while in a study by Santos et al.²⁸, 14.5% of students presented Burnout characteristics.

Asencio-López et al.²³, upon separating the evaluated students in two groups, one from the first to the third year of the course, and the other from the fourth to the sixth, found that the more advanced the year, the

higher the level of Burnout, associating this fact to the clinical cycle, a very stressful moment for a medicine graduation student. Other studies second this result^{16,25}.

No association was found between the syndrome and stress factors, indicating that academic demands are already enough to influence in the development of the syndrome. Pagnin et al.²⁰ found that medicine students whose career choice was motivated by the disease/death of family members, or by a disease they had, presented higher levels of emotional exhaustion.

The gender aspect is controversial. Mazurkiewicz et al.¹⁶ found in their study a high prevalence of Burnout (71%) with no different results between genders, while another research²⁰ indicated that the male gender was more protected against exhaustion, cynicism, and academic efficacy.

Also, for Dusan et al.¹⁹, approximately half of the women and only one third of the men reported to have moderate or elevated stress levels. Tests were found to be an stress inducing event for more than half of the students, especially among women.

A pilot study that aimed to explore the Impostor Syndrome (IS) and the Burnout in Medicine students, once genders were compared, found that the female gender was not significantly associated to Burnout components, but that it was to the IS, which affected females more than twice it did males (49.4% of women to 23.7% of men). Additionally, the IS was significantly associated to several factors of Burnout, such as exhaustion, cynicism, emotional exhaustion and depersonalization, lower levels of personal realization, moderate to high levels of depersonalizations, and low to moderate levels of personal achievement²⁶.

In a literature review, Jennings et al.¹⁵ pointed out that the experience of a Medicine university may prejudice the students' mental health. Medicine students in general present high levels of depression, anxiety, suicidal tendencies and mental health problems, whether when compared to themselves at the time of enrollment and to others in the same age group. Medicine students are also susceptible to Burnout because they are

exposed to cultural norms of detachment that promote emotional depletion and depersonalization.

When students go through their teaching-learning process, they can see theoretical and practical activities as stressing. High levels of stress may have negative effects both on student achievements and in their professional activities⁷.

When personal strategies to confront or minimize the effects of stress are ineffective or not used, the stress becomes chronic, and can lead the students to experience Burnout syndrome²². Measuring the degree of this syndrome in the years of graduation that include the clinical practice can help identifying the students with the higher chances of suffering under its effects in their future professional lives²⁴.

Some studies suggest the use of signals and symptoms to detect stress early and intervene adequately⁷.

According to the personal characteristics of each individual who have the syndrome or presents initial indications of it, intervention measures should be applied together with the labor and psychosocial variables, in such a way that more specific interventions will improve the efficacy of the few currently available treatments.^{5,17}

High levels of exhaustion undergone by the graduation students in the analyzed fields emphasize the need to continuously question, reflect and discuss within the teaching institutions, focusing on identification, management and prevention of situations that can potentially lead students to exhaustion and distress.^{5,18,21,22,24-26,28}

The association between abandoning the course and factors such as cynicism and professional efficacy demands actions to monitor the situation, focused on strengthening the graduation students' identification to the profession and to the needs of those who are questioning their professional choice^{5,21}.

Galván-Molina et al.²⁵, as they point out the alarming number of 60% of medicine students evaluated with potentially affected by psychological pathologies, such as depression, anxiety and Burnout, among

others, indicate that some students should be more carefully observed, as they are more likely to be affected.

This group would involve female students, those who live alone, have a history of sexual abuse, are not heterosexual, are sedentary, use alcohol and other drugs, as well as those who suffer from some psychic malady. The identification and treatment of this group of people could avoid serious psychopathology cases, and, therefore, the systematization of evaluation and the availability of access to treatment are essential. With the implantation of mental health promotion measures since the beginning of the courses, the mental health problems could be identified and monitored during the graduation process, allowing for a happier and more fulfilling professional life to future health professionals.

CONCLUSION

Based on this literature review, it is possible to see that the Burnout syndrome started its development among students, since, in addition to individual factors, they are inserted in an environment that generates occupational stress. This syndrome is believed to happen more often when students start to have direct contact with patients, because this experience is a transition moment, of uncertainty, and greater responsibility.

Therefore, institutional policies aimed at improving the support given to students and preventive strategies can help them to improve their professional learning and their healthy personal well-being. The diagnostic, as well as the treatment, must be instituted as early as possible for a better prognosis to be achieved.

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CONTRIBUTIONS

Priscila Sarmiento Pinto and Fabrícia Mিকেle Rodrigues Nunes conducted the bibliographic survey and the writing of this article. **Rejane Haidée Borges de Freitas a Débora e Silva Campos** took part in the discussion and the conclusion of the article. **Paulo Rogério Ferreti Bonan and André Ulisses Dantas Batista** offered guidance to all stages of the work, from theme and text selection to literature reading, review, discussion, and conclusion.

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