



Burnout syndrome in peruvian dental students: a prevalence study

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Aim: Burnout syndrome describes the state of long-term physical, emotional and mental exhaustion related to work. This syndrome can cause health problems related to stress, insomnia, cardiovascular and musculoskeletal diseases, including an increase in alcohol consumption and drug use. It is important to recognize the presence of the initial signs of this syndrome, therefore this study aimed to determine the prevalence of the burnout syndrome in peruvian dental students.

Methods: The study was observational, cross-sectional, and descriptive. It was carried out from September to November 2018, and it included a total of 154 dental students of four universities of La Libertad region, surveyed by census method. Three were private universities and one was public. Burnout was evaluated through the Maslach Burnout Student Survey Questionnaire (MBI-SS). The results were presented in absolute and percentage frequencies, as well as confidence intervals, using double-entry tables. **Results:** It was found that 24.68% of the students (24.71% in male students and 24.64% in female students) presented burnout syndrome. The public university of Trujillo presented the highest percentage of affected students (47.37%). A prevalence of 53,90% of emotional exhaustion was also found among the students under evaluation. **Conclusions:** Almost a quarter of the students surveyed presented burnout. It was also observed that the public University of Trujillo had a higher percentage of burnout than the three private ones. The percentage of prevalence of the burnout syndrome according to sex was similar. However according to dimensions, emotional exhaustion presented the highest percentage.

Keywords: Burnout, psychological. Education, dental. Students, dental. Stress, psychological.



Introduction

Burnout syndrome describes the state of long-term physical, emotional and mental exhaustion related to work^{1,2}. This syndrome can cause health problems related to stress, insomnia, cardiovascular and musculoskeletal diseases, including an increase in alcohol consumption and drug use^{1,3}. In the United States, it has been reported that 25.2% of pediatric dentists experienced emotional exhaustion or depersonalization and 9.1% occupational burnout¹.

University students are a group vulnerable to this problem, because they must meet demanding requirements in short periods of time⁴. For this reason, in recent years, research on this syndrome has not only been limited to the workplace, but also includes students⁵.

According to reports, burnout syndrome is common in Medicine and Dentistry students. This is due to the competitiveness of these programs and to the fact that students endure years of academic demands and high expectations from teachers, even at risk of developing mental disorders⁶⁻¹⁰.

According to Ghali and Awood¹¹, there are several stress factors for dental students, including demanding exams, clinical care of patients in different courses, aggressive criticism from teachers, little time to complete clinical requirements and even technical problems related to the dental chair. Likewise, the professional career is expensive, creating, together with the aforementioned factors, a stressful environment for learning, which causes a negative impact on the academic development and general well-being of the student^{12,13}.

To assess burnout syndrome in professionals, Maslach constructed the Maslach Burnout Inventory (MBI) scale. For their part, Schaufeli et al. proposed an adapted version for students called the Maslach Burnout Inventory-Student Survey (MBI-SS)^{14,15}, where they assess three key dimensions: Academic Self-Efficacy (ASE), Emotional Exhaustion (EE) and Cynicism (C)¹⁶. (Figure 1)

MASLACH BURNOUT INVENTORY-STUDENT VERSIÓN (MBI-SS) QUESTIONAIRE

Age: Sex: M () F () University: Class:.....

INSTRUCCTIONS: Indicate the answer that you think is appropriate about the frequency with which you feel the situation presented in the following statements:

0	1	2	3	4	5	6				
Never	Almost never	Sometimes	Regularly	Often	Almost always	Always				
Questions				0	1	2	3	4	5	6
1.- In my opinion, I am a good.										
2.- I believe that I make an effective contribution to the classes that I attend.										
3.- During class I feel confident that I am effective in getting the things done.										
4.- I can effectively solve the problems that arise in my studies.										
5.-I feel stimulated when I achieve my studies goals.										
6.- I have learned many interesting things during the course of my studies.										
7.- I feel used up at the end of a day at university.										
8.- I feel burned out from my studies.										
9.- I feel tired when I get up in the morning and I have to face another day at the university.										
10.- I feel emotionally drained by my studies.										
11.- Studying or attending a class is really a strain for me.										
12.- I have become less interested in my studies since my enrollment at the university.										
13.- I have become less enthusiastic about my studies.										
14.- I have become more cynical about the potential usefulness of my studies.										
15.-I doubt the significance of my studies.										

Figure 1. Maslach burnout inventory-student survey (mbi-ss) questionnaire.

Through this instrument, individuals present burnout when they obtain a high score in EE, in combination with a high level of C or a low level of ASE¹⁷.

ASE is defined as the negative view of oneself. Assess whether the person doubts their ability to perform the academic and practical work. EE is a state of emotional and sometimes physical exhaustion. Those who experience it feel that they cannot give more of themselves and cannot give emotional support to others. This is one of the most obvious manifestations of the syndrome. As for C, it is reflected in indifference, or in a negative attitude of devaluation and loss of interest in studying^{14,18}.

The Comprehensive Dental Clinic subject or its equivalent, depending on the corresponding denomination in the study plan, has high practical requirements in a very competitive environment and a difficult interaction with patients, causing stress in the students. This is due to the fact that structured activities imply delivery of work and treatment of patients in short periods of time³. According to Vered et al.¹⁰, it is important to recognize the presence of the initial signs of this syndrome in students, due to the possible negative impact on their health, treatment of patients and academic performance.

Given the above, the objective of this study was to determine the prevalence of burnout syndrome in students attending the Comprehensive Dental Clinic or its equivalent in the Dentistry or Stomatology program of the universities of the La Libertad Region

(Peru). In addition, the results are presented according to sex, university and dimensions of the burnout syndrome. The results serve for universities and health authorities to implement preventive measures and/or multidisciplinary therapies aimed at improving the pedagogical aspect, offering treatment to affected students.

Materials and Methods

This study follows an observational, cross-sectional and descriptive design. It was developed from September to November 2018 in the dental centers of the Antenor Orrego Private University (AOPU), National University of Trujillo (NUT), Alas Peruanas University Trujillo Branch (APU) and Los Angeles Catholic University of Chimbote Trujillo Branch (LACUCH), which were the universities that had the Dentistry or Stomatology program in the La Libertad Region (Peru).

Due to the small number of students in the program who were taking the subject in question, the collection of information from the sample population was of a census type, being evaluated those who were present at the time of the application of the survey. Students over 18 years of age enrolled in the programs were included, and students who did not wish to participate, who made smudges and/or did not complete the questionnaire were excluded.

The survey had the approval of the Faculty of Human Medicine and the Research Bioethics Committee of the Antenor Orrego Private University (Resolution # 185-2019-UPAO), in addition to the corresponding authorization from the coordination of the programs of the aforementioned universities. The principles of Helsinki Declaration of the World Medical Association, in its most recent version, and the General Health Law of Peru # 26842, were taken into account.

Before the application of the survey, the purpose of the research was explained to all the students, requesting their participation. Likewise, they were given the informed consent form to read and sign. Finally, the survey was distributed to each student to answer the questions.

The evaluation was carried out through the validated Spanish version of MBI-SS questionnaire, which consists of 15 items, which has been designed to measure the burnout syndrome in students^{17,19,20}. This instrument considers that the aforementioned syndrome has three dimensions or subscales: EE, C and ASE¹³.

The data collected was processed automatically in the statistical software SPSS Statistics 22.0 (IBM, Armonk, NY, USA), and then the results are presented in tables according to the objectives set. Absolute frequencies, percentage frequencies and confidence intervals are presented, using double-entry tables.

Results

A total of 154 students were surveyed, who were attending the Comprehensive Dental Clinic or its equivalent in the Dentistry or Stomatology program of the universities of the La Libertad Region. Of these, 85 (55.2%) were female and 69 (44.8%) male, aged between 20 and 45 years (Table 1). In this sense, 66 students from AOPU, 19 from NUT, 18 from APU and 51 from LAUCH were evaluated.

Table 1. Students who attend Odontology Integral Clinic, or its equivalent, in the Dental Program in the universities of La Libertad Region (Peru, 2018), distributed by age, university and sex.

Variable	Category	Average age	SD	Min	Max	Range
University	APU*	29.00	6.20	20	42	22
	LACUCH**	26.61	5.51	20	45	25
	NUT***	24.26	1.91	22	28	6
	AOPU****	22.68	2.25	20	35	15
Sex	Female	24.44	4.67	20	45	25
	Male	25.51	4.65	20	42	22
Total		24.92	4.68	20	45	25

*APU: Alas Peruanas University Trujillo Branch, ** LACUCH: Los Angeles Catholic University of Chimbote Trujillo Branch, ***NUT: National University of Trujillo, ****AOPU: Antenor Orrego Private University, +CI: Confidence interval.

Regarding to the prevalence of burnout syndrome, 24.68% of the students presented it. While in Table 2 the prevalence of burnout syndrome is shown, according to university, where the highest percentage (47.37%) was found in the NUT and, the lowest, was presented by the students of the LAUCH (17.65 %).

Table 2. Prevalence of the burnout syndrome, according to university, in students who attend Odontology Integral Clinic, or its equivalent, in the Dental Program in the universities of La Libertad Region (Peru), 2018.

University	n	Burnout syndrome					
		Absence			Presence		
		n	%	CI* 95%	n	%	CI* 95%
AOPU*	66	51	77.27	(67.2 – 87.4)	15	22.73	(12.6 – 32.8)
LACUCH**	51	42	82.35	(71.9 – 92.8)	9	17.65	(7.2 – 28.1)
NUT***	19	10	52.63	(30.2 – 75.1)	9	47.37	(24.9 – 69.8)
APU****	18	13	72.22	(51.5 – 92.9)	5	27.78	(7.1 – 48.5)
Total	154	116	75.32	(68.5 – 82.1)	38	24.68	(17.9 – 31.5)

*AOPU: Antenor Orrego Private University Alas ** LACUCH: Los Angeles Catholic University of Chimbote Trujillo Branch, *** APU: Peruanas University Trujillo Branch, **** NUT: National University of Trujillo, +CI:Confidence Interval.

Table 3 shows that the prevalence of burnout syndrome is similar in both sexes. On the other hand, Table 4 indicates the prevalence of burnout syndrome, according to its dimensions, where a greater presence of emotional exhaustion was found (53.90%), while 12.99% of students presented cynicism.

Table 3. Prevalence of the burnout syndrome, according to sex, in students who attend Odontology Integral Clinic, or its equivalent, in the Dental Program in the universities of La Libertad Region (Peru), 2018.

Sex	n	Burnout syndrome					
		Absence			Presence		
		n	%	CI* 95%	n	%	CI* 95%
Female	85	64	75.29	(66.1 – 84.5)	21	24.71	(15.5 – 33.9)
Male	69	52	75.36	(65.2 – 85.5)	17	24.64	(14.5 – 34.8)
Total	154	116	75.32	(68.5 – 82.1)	38	24.68	(17.9 – 31.5)

*CI:Confidence interval.

Table 4. Prevalence of the burnout syndrome, according to dimensions, in students who attend Odontology Integral Clinic, or its equivalent, in the Dental Program in the universities of La Libertad Region (Peru), 2018.

Dimension	Category	n	%	CI*95%	
				LL	UL
Academic Self-Efficacy	High	52	33.766	26.30	41.24
	Low	36	23.377	16.69	30.06
	Medium	66	42.857	35.04	50.67
Emotional Exhaustion	High	83	53.896	46.02	61.77
	Low	30	19.481	13.23	25.74
	Medium	41	26.623	19.64	33.60
Cynism	High	20	12.987	7.68	18.30
	Low	90	58.442	50.66	66.23
	Medium	44	28.571	21.44	35.71

*CI:Confidence interval.

Discussion

Burnout syndrome is due to constant and prolonged exposure to high levels of stress²¹. If it is not treated, it can cause health problems such as insomnia, headaches, cardiovascular and gastrointestinal problems, and depression; likewise, social problems such as mistreatment of relatives and, in the case of health professionals, could affect their patients¹⁶.

In the present study, it was found that approximately a quarter of the students of the dentistry program who were taking the Comprehensive Dental Clinic subject or equivalent presented burnout. In a similar study carried out by Mafla et al.²², it was found that 7% of dentistry students presented burnout, which corroborates, although in a lower percentage, that students who take this subject are prone to presenting this syndrome. Sufia and Latif¹⁶ indicate that it is important to detect this health problem early, because its evolution process is gradual, and it may present aggravation in the future professional²³⁻²⁵.

It was also found that in the state university (NUT) the prevalence of burnout is higher than in the three other universities. This data coincides with the study by Ghali and Awood¹¹, who explains that in private universities there is better availability of clinical

facilities and students have fewer problems in taking care of patient treatments, presenting less stress in the process of patient's recruitment, purchase of materials and instruments required in the professional career. In the case of the present study, this difference may also be due to the fact that the dental center of the state university (NUT) is located outside the Trujillo district, making it difficult for patients and students to access and attend.

Regarding the prevalence of burnout, according to gender, it was found that the percentages are similar. These data coincides with the findings of Ghali and Awood¹¹ and Mafla et al.²² Ghali and Awood¹¹ explain that this may be because the students are in the same clinical environment, facing similar obstacles and supporting each other during the semester.

The studies by Atalayin et al.¹³, Sufia and Latif¹⁶, Ghali and Awood¹¹ and Collin et al.³ found, like the present investigation, that students present a high percentage of EE. Sufia and Latif¹⁶ indicate that this may be due to the constant concern of students to meet the theoretical and practical requirements in very limited times. In addition, Ghali and Awood¹¹ consider that students face problems such as lack of materials, unsuccessful search for patients, and technical problems with work teams. On the other hand, most of the students responded positively in the ASE dimension, showing that they are satisfied with the career, similar data was founded in the present study.

It was also found that the percentage of students with C was low, this result being contrary to what was reported by Sufia and Latif¹⁶. The difference may be due to the fact that, in some contexts, students have a higher workload and receive mistreatment from part of teachers and administrators^{16,21}.

Burnout syndrome has been evaluated in health professionals in different countries of the world. A study carried out in the United States in recent years has found that its prevalence is constantly increasing²⁶, being recognized, according to Collin et al.³ as a "chronic systematic problem that lies fundamentally in the work environment", so its effective treatment requires profound changes such as improving work schedules, increasing tutoring or support for the worker and, if necessary, making changes in the administration.

It is important to highlight that burnout syndrome is a global mental health problem, which is why efforts must be made to detect and treat it as soon as possible²⁵. Jin et al.²³ have reported cases of dentists with this syndrome, whose onset may have occurred during their student years. If it is not detected during the undergraduate course, it could have adverse effects on the student's future professional life. In this regard, the study by Meyerson et al.²⁷, among young dentistry students and professionals, proposes an early detection using the subscales of the Sensory Processing Sensitivity Questionnaire that may allow the development of strategies to prevent future depletions.

This work provides epidemiological information regarding the mental health of dental students. The conclusions of this study could be extrapolated to the north of the country, since dental programs in Peru have similar educational characteristics and the responsibility to recruit patients to comply with clinical requirements is laid upon the students.

Future longitudinal and correlation studies of this syndrome with sociodemographic characteristics of the students are recommended. In this way, the university authorities of La Libertad region should identify the students who present this health problem to be treated in a timely manner. On the other hand, the Dentistry or Stomatology programs could design a system to recruit patients for clinical practices, guaranteeing a regular flow, in order to help students in their search process, which might avoid the high emotional exhaustion among students.

In conclusion, the results of the present investigation allow us to conclude that the prevalence of burnout syndrome was present in one quarter of the students. In addition, the percentage of students with burnout syndrome was similar in both sexes and emotional exhaustion is the dimension that occurs most frequently.

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Data Availability

Datasets related to this article can be found at: <http://repositorio.upao.edu.pe/handle/20.500.12759/5206>

Hosted at: www.upao.edu.pe

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Author Contributions

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Angel Steven Asmat Abanto: Conceptualization; Methodology; Project administration; Supervision; Validation; Visualization; Writing - original draft; Writing - review & editing.

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