

Research article

Medwave 2016 Abr;16(3):e6432 doi: 10.5867/medwave.2016.03.6432

Burnout syndrome in first to sixth-year medical students at a private university in the north of Mexico: descriptive cross-sectional study

Authors: Laura Asencio-López[1], Guillermo Daniel Almaraz-Celis[1], Vicente Carrillo Maciel[1], Paola Huerta Valenzuela[1], Luis Silva Goytia[1], Marcos Muñoz Torres[1], Fernando Monroy Caballero[1], Joel Regalado Tapia[1], Kerigma Dipp Martin [1], Dinorah López Miranda[1], Clyvia Medina Lavenant[1], Karen Pizarro Rodríguez[1], Cesar Santiago Martínez[1], Alma Geovanna Saucedo Aparicio[1], Rodolfo Flores Lepe[1]

Affiliation:

[1] Facultad de Medicina de la Universidad Autónoma de Durango, Campus Laguna, Durango, México

E-mail: dr_danielalmaraz@live.com.mx

Citation: Asencio-López L, Almaraz-Celis GD, Carrillo Maciel V, Huerta Valenzuela P, Silva Goytia L, Muñoz Torres M, et al. Burnout syndrome in first to sixth-year medical students at a private university in the north of Mexico: descriptive cross-sectional study. *Medwave* 2016 Abr;16(3):e6432 doi: 10.5867/medwave.2016.03.6432

Submission date: 4/2/2016

Acceptance date: 12/4/2016

Publication date: 25/4/2016

Origin: not requested

Type of review: reviewed by four external peer reviewers, double-blind

Key Words: medical students, emotional stress, depressive symptoms, burnout syndrome

Abstract

INTRODUCTION

Burnout syndrome is a three-dimensional clinical syndrome caused by stress at work. It is frequent in professions which require direct contact with people. In Mexico, the presence of Burnout Syndrome in doctors and medical students, is characterized as a threat to their health, quality of life and professional performance.

OBJECTIVES

To evaluate the prevalence of burnout syndrome in students of years 1 through 6 of medical school at a private university in northern Mexico.

METHODS

Cross-sectional study in the Escuela de Medicina Campus Laguna de la Universidad Autónoma de Durango. The one-dimensional scale of Burnout Student (EUBE) and the Maslach Burnout Inventory (MBI) were applied to the participants. SPSS 19 was used to analyze the data.

RESULTS

Of the 344 students, 255 participated; 153 from years 1 to 3 (group 1); and 72 from years 4 to 6 (group 2). We found that 94.1% of the students of group 1 had mild burnout syndrome, and 2.8% had moderate burnout syndrome. In Group 2, 27.8% had moderate burnout syndrome, and 8.3% had severe burnout syndrome. The prevalence of severe burnout syndrome was higher in group 2 than in group 1 ($p=0.02$).

CONCLUSIONS

Burnout syndrome affects medical students across all stages of their studies, and develops in a progressive way. In our study, external factors have no influence on the development of burnout syndrome.

Introduction

Burnout syndrome is a three-dimensional clinical syndrome caused by work stress. It was described initially in 1974 by psychologist Herbert Freudenberger [1], and later, in 1981, characterized in three dimensions by Maslach and Jackson [2]. It includes emotional exhaustion, depersonalization (cynicism) and low labor realization. It is very common in professions requiring direct contact with people, rising in the health area. The World Health Organization has listed it as an occupational risk [2].

The burnout syndrome is diagnosed by the Maslach Burnout Inventory (MBI), which assigns a score to each of the three areas involved in the syndrome. The diagnosis for the burnout syndrome is established through high scores in emotional exhaustion and depersonalization areas and low scores in labor realization [3].

In Mexico the presence of burnout syndrome a physicians and medical students is being characterized as a serious health, quality of life and performance threat for these professionals. Between 10% and 12% of physicians suffer psychological problems and addictive behaviors that could be related to the burnout syndrome [4].

In students the syndrome comprises emotional exhaustion, cynicism and low academic achievement. It is believed to be a result from the high level of school demand inside and outside the classroom [5]. Bourdeau et al., found severe burnout syndrome in 15% of first year medical students and 44% in third year students; this suggesting the progressive development of the syndrome in relation to stressful factors that are not completely defined [6].

Dyrbye publishes 50% prevalence of student burnout syndrome in the United States, and Thyssen reports 27% in the United Kingdom. Statistical projections say that 15% to 30% of all medical students in Latin America suffer from burnout syndrome. In a study conducted among medical interns in Tepic, Nayarit, it was found that 94% of them had indicators of negative mental health [7].

Diagnosis of student burnout syndrome is performed by the One-dimensional Student Burnout Scale (ODBS), already approved and validated in Mexico. It consists of 15 items and is the instrument of choice for the diagnosis of burnout syndrome in this population [8].

The aim of this study was to evaluate the prevalence of burnout syndrome among medical students from first to sixth year at a private university in northern Mexico.

Methods

For this cross-sectional study, by invitation, we took a sample of students from first to sixth year of medicine at the Autonomous University of Durango Campus Laguna, during the months of October and November 2015. The participants were divided into two groups according to their training stage: "basic course" and "clinical course".

The first group consisted in participants of first to third year, in whom the instrument applied was the One-dimensional Student Burnout Scale (Appendix 1) for diagnosis of the student burnout syndrome; and the second one were students from fourth to sixth year in whom we used the Maslach Burnout Inventory (Appendix 2). To both groups a closed questionnaire was applied with answers "yes" or "no" to identify stress factors that could relate to the level of burnout.

Prior to their inclusion in this study, the participants were interrogated about whether in the previous six months they were diagnosed or were in treatment for mood disorders. The students who responded affirmative were excluded. This study was reviewed and approved by the ethics and research committee of the Universidad Autonoma de Durango. All data were handled anonymously. We conducted a simple analysis according to the variable type studied using SPSS 19.

Results

Two hundred and twenty-five students were included, which is 65.4% of the University's School of Medicine population. One hundred and fifty three students were assigned to group one and 72 to group two. Of the overall group 119 were male, the ratio male/female was 1.12:1. Four students were excluded, two had a diagnosis of major depressive disorder, one dysthymia and one generalized anxiety.

In group one, 94.1% (n=144, 76 males and 68 females) of the students had mild Burnout syndrome and 2.8% (n=8, 2 males and 6 females) had moderate burnout syndrome. No one had severe burnout syndrome (Table 1).

	Frequency	%
Without Burnout Syndrome	1	0.4
Mild Burnout Syndrome	144	94.1
Moderate Burnout Syndrome	8	2.8
Total	153	100.00

Table 1. Distribution of Burnout syndrome among basic course students.

In this group, 96.7% of the students were single. When the relationship between civil status and level of burnout syndrome was explored, we found no statistically significant differences between single and married students ($p=0.5$).

Stressors like having a job, having economic dependents, suffering a chronic illness or a close relative seriously ill or dead, showed no association with burnout syndrome in our study.

In this group eight students admitted having used illegal drugs more than once, seven of them had mild Burnout

syndrome and one had moderate burnout syndrome. There were no statistical significant differences when compared versus those students who never used illegal drugs ($p=0.9$).

In group two, 27.8% ($n=20$) had moderate burnout syndrome and 8.3% ($n=6$) had severe burnout syndrome (Table 2). The level of burnout syndrome was clearly higher in the group from the clinic course than in that from the basic course $p=0.02$.

Burnout Syndrome			
		Frequency	%
Emotional Exhaustion + Depersonalization	Mild	46	63.9
	Moderate	20	27.8
	High	6	8.3
	Total	72	100.0

Table 2. Distribution of Burnout syndrome among clinic course students

When the three components were evaluated separately, in labor accomplishment there was a greater amount of students with severe burnout syndrome 69.4% ($n = 50$), with moderate burnout syndrome there were 9.7% ($n = 7$) and mild burnout syndrome 20.8% ($n = 15$).

The emotional exhaustion appeared in low intensity in 61.1% ($n=44$) of the subjects, 27% ($n=20$) had moderate emotional exhaustion, and 11.1% ($n=8$) had high emotional exhaustion. In the depersonalization category, it was observed that 91.7% ($n = 66$) of students had low burnout syndrome and only one student had severe burnout syndrome.

Evaluating the influence of stress factors examined on the level of burnout syndrome in clinical course students, it was found that a high number of subjects with severe burnout in labor accomplishment had answered yes to the questions about having to work besides studying and about a close relative died in the last 12 months. However, this was not statistically significant Chi square=1.5 and $p = 0.3$. None of the studied factors showed a significant influence over the global evaluation of on the syndrome (Table 3). All participants in the clinical course were single.

Stressors	Emotional exhaustion			Depersonalization			Labor accomplishment			X2
	Low	Moderate	High	Low	Moderate	High	Low	Moderate	High	
Economical dependents	3	3	1	7	0	0	4	0	3	1.5
Work	15	6	1	19	3	0	6	1	15	1.5
Chronic disease	1	2	2	3	2	0	1	1	3	0.3
Proceedings against their ethics	0	0	2	1	1	0	1	0	1	0.7
Death of family member in the last year	21	4	3	26	2	0	6	2	20	0.5
Use of illegal drugs	0	3	0	1	1	1	1	2	0	0.9

*All participants responded affirmatively to the presence of at least one stress factor.

Table 3. Correlation between stress factors and level of burnout syndrome component *.

Three of the 72 students in group 2, one in undergraduate internship, admitted having used illegal drugs more than once, but this did not show statistical correlation with the level of burnout.

Discussion

The burnout syndrome has gained such importance that now it is considered by World Health Organization as an occupational hazard. Health staff that suffers it, most of the time doesn't know it, conveying serious personal and social consequences that impair their quality of life and the quality of services they provide [9].

Early studies of the burnout syndrome framed it as a condition that only affected physicians and residents. However, recent research reports an upward trend of burnout among medical students and undergraduate interns [10].

In the present study, the groups were divided according to the fact of dealing with patients or the participation in procedures that students perform during their medical degree.

From first to third year, training activities are mainly done within the school: in classrooms, library, dissection lab and other laboratories. That is why, interaction with patients and hospital activities could not be considered as risks factors for the development of burnout syndrome within this population. The results of our study show that over 90% met criteria for mild burnout syndrome, which is 40% higher than what Dyrbye et al reported in the United States [5]. This figure should be taken with caution due to the different scales used for the diagnosis.

The One-Dimensional Student Burnout Scale is not exclusively for the medical degree, but it is useful among students in the basic course. It explores the spheres of exhaustion, lack of motivation and poor academic achievement.

A minimum percentage of study subjects (2.8%), showed moderate burnout and half of them had overall insufficient scores performance.

The factors associated with student burnout syndrome are not entirely clear. In Derby's study it is suggested that the factors associated with the student burnout syndrome are external to the degree's activities, like having experienced any illness or a mourning situation [5]. Nonetheless, in this sample we didn't find any significant association between the degree of student burnout syndrome and presence of stressful factors; suggesting that it is the academic requirement per se, the one responsible for the development of the syndrome.

Because there were few students who had moderate burnout syndrome scores and none scored high marks, the resulting inferences are not all significant. Therefore, it is necessary to repeat these observations in a larger sample.

In basic course subjects the consequences of suffering burnout syndrome are similar to those of medical graduates; reporting student absenteeism, apathy, indifference and low academic achievement, reaching university abandonment. Suicidal thoughts have been reported in up to 11% of those with high burnout syndrome; they fade after the symptoms of this syndrome disappear [11].

For the participants in the clinical course, activities are more focused in dealing with patients through medical consultation, assistantships in surgical procedures and hospitals wards, on top of their academic obligations. In addition, during the sixth year, the student faces life as a hospital undergraduate intern. It is at this point when the student decides the course that his career will take.

In the sample of students in the clinical course the prevalence of moderate burnout syndrome went up to 27.8% and severe burnout to 8.3%, which was significantly higher when compared with their counterparts in the basic course, $p=0.02$. Which confirms in our population what was observed by Boudreau et al., who argued that the burnout syndrome develops gradually during the medical career [6]. While the main risk factor for burnout syndrome is work stress, negative personal situations may have some level of influence[10].

In this series, no significant association was found between stress factors studied and the level of burnout in the clinical course. However, it was observed that more than a third of the students who scored high for the category of "job satisfaction" admitted having to work besides studying and having experienced a mourning situation. For this reason, it is necessary to do this exploration in a larger sample.

The observation that more than half of the subjects have high burnout in the labor accomplishment field, could be because the medical career is very long and at the point where they are still as students, their contemporaries are already economically active.

The clinical course is an extremely stressful stage in which doctors in training may be more susceptible to have some degree of burnout syndrome. The results of our study confirm what was said by Enoch et al, who claim that at the end of the sixth year most students will suffer some degree of burnout syndrome, trending more to the high burnout [12]. The high burnout is a risk factor for mayor depressive disorder in medical students. This is a negative health indicator that reduces the quality of life and job satisfaction of future physicians.

This study describes a health phenomenon of increasing interest for the medical community, and to medical students at all levels. In addition it tries to establish associations between the burnout syndrome and the presence of stress factors that are not related to academic and/or assistance activities. Unfortunately, this design does not support causality inference and it only allows us to establish general associations. Because of the high prevalence of the burnout syndrome in our population, it is

necessary to expand the research to populations comparable with ours, and, if it is confirmed that medical students are more vulnerable to burnout syndrome than other populations, it will be necessary to characterize each component of syndrome to undertake relevant preventive actions.

Conclusions

The burnout syndrome is a health problem that affects a lot of medical students of all levels. At the beginning of the university degree almost all subjects that suffer it have it in low intensity; however as they progress in the degree there is a greater proportion of students with moderate and severe burnout.

The students in the clinical course show more tendency to high burnout syndrome in the sphere of labor accomplishment, which could be because at the point where they are still students, their contemporaries are already economically active.

We found no significant influence of any external factor on the level of burnout syndrome, which leads us to believe in the idea that academic and assistance stress are solely responsible for the syndrome. These assertions must be demonstrated in successive work.

Notes

From the editor

The authors originally submitted this article in Spanish and subsequently translated it into English. The *Journal* has not copyedited the English version.

Ethical aspects

The *Journal* is aware that the scientific ethics committee of The Faculty of Medicine of the University of Durango, Campus Laguna, learned about this study and its possible publication in a biomedical magazine.

Declaration of conflicts of interest

The authors have completed the declaration form ICMJE conflicts of interest, and declare that they have not received funding for the completion of the report; do not have financial relationships with organizations that could have interests in the published article, in the last three years; and have no other relationships or activities that could influence the published article. Forms can be requested by contacting the author responsible or the editorship of the *Journal*.

Financing

The authors declare that there were no external sources of funding.

Thanks

The authors acknowledge the collaboration of the Faculty of Medicine of the Autonomous University of Durango, Campus Laguna, Mexico.

References

1. Sablik Z, Samborska-Sablik A, Drożdż J. Universality of physicians' burnout syndrome as a result of experiencing difficulty in relationship with patients. *Arch Med Sci.* 2013 Jun 20;9(3):398-403. | [CrossRef](#) | [PubMed](#) |
2. Gutiérrez Aceves GA, Celis López MÁ, Moreno Jiménez S, Fariás Serratos F, Suárez Campos J de J. Síndrome de burnout. *Arch Neurocién.* 2006;11(4):305-9. | [Link](#) |
3. Buzzetti-Bravo M. Validación del Maslach Burnout Inventory (MBI), en dirigentes del Colegio De Profesores A.G. de Chile. [Memoria para optar al título de Psicólogo]. Santiago: Facultad de Ciencias Sociales, Universidad de Chile; 2005. | [Link](#) |
4. Tobie-Gutiérrez WA, Nava-López JA. Burnout, su impacto en la residencia médica y en la atención de los pacientes. *Rev Mex Anestesiol.* 2012;35(1):233-7. | [Link](#) |
5. Dyrbye LN, Thomas MR, Huschka MM, Lawson KL, Novotny PJ, Sloan JA, et al. A multicenter study of burnout, depression, and quality of life in minority and nonminority US medical students. *Mayo Clin Proc.* 2006 Nov;81(11):1435-42. | [PubMed](#) |
6. Boudreau D, Santen SA, Hemphill RR, Dobson J. Burnout in medical students: Examining the prevalence and predisposing factors during the four years of medical school. *Ann Emerg Med.* 2004;44(4):75-6. | [CrossRef](#) |
7. Barraza-Salas JH, Romero-Paredes JJ, Flores-Padilla L, Trejo-Franco J, Lopez-Aviles G, Pando-Moreno M, et al. Indicadores de salud mental y Síndrome de Burnout en Internos rotatorios en SSN en Tepic, Nayarit. *Waxapa.* 2009;1(1):47-50. | [Link](#) |
8. Barraza Macías A. Validación psicométrica de la escala unidimensional del burnout estudiantil. *Rev Intercontinental Psicol y Educ.* 2011;13(2):51-74. | [Link](#) |
9. Felton JS. Burnout as a clinical entity--its importance in health care workers. *Occup Med (Lond).* 1998 May;48(4):237-50. | [PubMed](#) |
10. Camacho-Avila A, Juárez-García A, Arias Galicia F. Síndrome de burnout y factores asociados en médicos estudiantes. 2007. *Ciencia & Trabajo.* 2010 Ene-Mar;12(35):251-256. | [Link](#) |
11. Ramírez A, Medeiro M, Muñoz C, Ramírez G. Alcances del síndrome de Burnout en estudiantes de medicina. *Rev ANACEM.* 2012;6(2):110-2. | [Link](#) |
12. Enoch L, Chibnall JT, Schindler DL, Slavin SJ. Association of medical student burnout with residency specialty choice. *Med Educ.* 2013 Feb;47(2):173-81. | [CrossRef](#) | [PubMed](#) |

Author address:

[1] Circuito Industrial Durango 5001
Carretera a Santa Rita
Gómez Palacio
Durango
México



Esta obra de Medwave está bajo una licencia Creative Commons Atribución-No Comercial 3.0 Unported. Esta licencia permite el uso, distribución y reproducción del artículo en cualquier medio, siempre y cuando se otorgue el crédito correspondiente al autor del artículo y al medio en que se publica, en este caso, Medwave.