Educación Médica 25 (2024) 100920

Educación Médica

www.elsevier.es/edumed

ORIGINAL ARTICLE

Emotional intelligence and burnout in medical students

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Received 24 January 2024; accepted 19 March 2024
Available online xxxx

KEYWORDS
University students;
Medicine;
Academic burnout;
Emotional intelligence

Abstract
Introduction: Medical students have a high prevalence of Academic Burnout Syndrome (ABS); however, few studies have analyzed the protective factors of this syndrome in this population.
Objective: To determine the association of emotional intelligence (EI) with ABS in medical students.
Methods: A cross-sectional, descriptive, and correlational study was conducted on medical students using Google Forms to respond to the Trait Meta-Mood Scale, and the Maslach Burnout Inventory–General Survey for Students to determine EI and ABS, respectively.
Results: Between 36% and 50% of students have insufficient attention, clarity, and emotional repair. Furthermore, 13% of students were diagnosed with ABS. It was found an association between subscales of EI and the ABS. It was observed that women got lower punctuation on EI and showed a higher prevalence of ABS.
Conclusions: In this population, the students with higher abilities of EI showed the lowest symptomatology of ABS, it is necessary to include training in the progress of abilities of EI inside of study programs.

PALABRAS CLAVE
Estudiantes universitarios;
Medicina;
Burnout académico;

Inteligencia emocional y burnout en estudiantes de medicina

Resumen
Introducción: Los estudiantes de medicina están expuestos a altas exigencias académicas que los predisponen a desarrollar el Síndrome de Burnout Académico (SBA), sin embargo, a nivel

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https://doi.org/10.1016/j.edumed.2024.100920

Inteligencia emocional

nacional, pocos estudios han analizado los factores protectores que pueden disminuir la incidencia de este síndrome en esta población. Este estudio busca determinar la asociación de la inteligencia emocional (IE) con el SBA en los estudiantes de medicina.
Métodos: Se diseñó un estudio transversal, descriptivo y correlacional en estudiantes de medicina, los cuales respondieron por medio de un formulario de Google, la Escala Rasgo de Metaconocimiento Emocional y el Inventario de Burnout de Maslach para Estudiantes para determinar la IE y el SBA respectivamente.
Resultados: Entre el 36 y 50% de los estudiantes presentan atención, claridad y reparación emocional insuficiente. Además, 13% de los estudiantes mostraron SBA. Se encontró asociación entre las subescalas de IE y las del SBA. Se observó que las mujeres obtuvieron menores puntuaciones de IE y mayor prevalencia de SBA.
Conclusiones: Los estudiantes con mayores habilidades de IE muestran menor sintomatología del SBA, es necesario incluir capacitación en el desarrollo de habilidades de IE dentro de los programas de estudio.

Introduction

Medical students are exposed to excessive study hours, high academic pressure, and patient contact, among other factors that make them vulnerable to developing Academic Burnout Syndrome (ABS).[1,2] Some of the consequences of this syndrome include decreased honesty and integrity,[3] the desire to drop out of the career, professional dissatisfaction,[4] poor academic performance, as well as suicidal ideation.[5]

The main risk factors associated with ABS include female gender, last years of the career, long working hours, and low job satisfaction.[4,5] On the other hand, some protective factors have been identified, such as feeling valued at work, maintaining high levels of optimism and success at work, receiving adequate financial compensation,[6] experiencing feelings of competence,[7] and possessing adequate emotional intelligence (EI) skills.[8]

EI is the ability to regulate, perceive, and understand one's feelings and emotions as well as those of others,[9] in addition, it contributes to academic training allowing the development of skills such as clinical communication, doctor–patient relationships, teamwork, and leadership.[10] Students with more developed EI skills show adequate adaptive coping with stress,[11,12] resulting in the development of positive emotions, avoidance of stress and depression,[13,14] as well as better academic performance.[11,12]

Due to the high prevalence of ABS among medical students and the proposition that EI may be a protective factor for the development of ABS, this study aimed to determine the association between EI and ABS in medical students to implement these results in more effective intervention and prevention strategies concerning the mental health of this population.

Material and methods

A cross-sectional, descriptive, and correlational study was conducted in which medical students of the Academic Division of Health Sciences (DACS) of the Universidad Juárez Autónoma de Tabasco (UJAT), enrolled in the February–August 2023 school year, were included.

A non-probabilistic sampling was performed, in which the sample size was calculated according to the formula for finite population, with a total population of 1304 students, a reliability of 95%, and a margin of error of 5%, determining a sample of 400 students. Students of both sexes who met the following criteria were included: To be enrolled in the degree of medical surgeon at the UJAT during February–August 2023, regardless of their academic status, to accept and sign the informed consent, and to answer in full the questionnaires given. Students under psychiatric or psychological treatment were excluded. All respondents completed the questionnaire, so there were no reasons for elimination.

Instruments

Sociodemographic questionnaire

In order to know some data of the selected population, a series of items were designed that included: gender, age, and year of study.

Maslach Burnout Inventory–General Survey for Students (MBI-GS-S)

The Spanish and modified version of the MBI-GS-S was used.[15] This instrument is composed of 15 items grouped into 3 subscales: emotional exhaustion (5 items: 1, 4, 7, 10, and 13), cynicism (4 items 2, 5, 11, and 14), and academic efficacy (6 items 3, 6, 8, 9, 12, and 15). Each item has 7 response options measured by a Likert-type scale ranging from 0 to 6 where: 0 = Never, 1 = Rarely, 2 = Occasionally, 3 = Sometimes, 4 = Frequently, 5 = Usually, 6 = Every time. The ABS diagnosis is obtained based on high scores on emotional exhaustion (> 15), cynicism (> 10), and low self-fulfillment (< 22) subscales.[15,16]

This instrument has been validated in the Mexican population, showing structural validity and significant levels of reliability (Cronbach's alpha 0.733).[17]

Trait Meta-Mood Scale (TMMS-24)

The TMMS-24,[9] measures emotional intelligence through the self-perception of beliefs and attitudes toward one's emotions and how they are handled. It consists of 24 items, subdivided into three subscales: Emotional Attention, Emotional Clarity, and Emotional Repair, on a Likert scale of 1–5 points where 1 = Strongly disagreed, 2 = Somewhat agree, 3 = Quite agree, 4 = Agree, and 5 = Strongly agree. The score is obtained by adding up the responses for each subscale, with the score for each subscale ranging from 8 to 40 points[9] (Table 1).

Procedure

Once authorized to conduct the study within the DACS, an invitation was sent to all students through the official social networks of the medical school (institutional mail, Facebook, WhatsApp, and Telegram) with a link that directed them to the questionnaire made in Google Forms. Those who agreed to participate voluntarily had to sign an informed consent and answer the sociodemographic questionnaire, the MBI-GS-S, and the TMMS-24. The data were collected during an examination-free period. Subsequently, the corresponding analyses were carried out.

Statistical analysis

Descriptive analysis was presented as frequencies and percentages. To obtain the association between emotional intelligence, burnout, and sociodemographic variables, the chi-square test (X^2) was applied. A confidence level of 95% was considered in all statistical tests, and a significance level of $p < .05$ was used. The data were analyzed with the SPSS statistical package version 23 for MacOS (IBM Corp., Armonk, NY).

Results

A total of 400 medical students were surveyed, of which 57.2% ($n = 229$) were female and 42.7% ($n = 171$) male, with an average age of 21 ± 0.09 years (range 17–30 years old). The distribution by school year was homogeneous, obtaining a sample of 80 students from each of the five years of study.

Regarding EI, it was observed that 37.8% ($n = 151$) of the students had insufficient emotional attention; similarly, 52.5% ($n = 210$) and 36.3% ($n = 145$) showed insufficient emotional clarity and emotional repair, respectively (Table 2).

Table 1 Cut-off points for each TMMS-24 subscale.

Subscale		Men	Women
Attention	Insufficient	< 21	< 24
	Adequate	22–33	25–35
	Excessive	> 33	> 36
Clarity	Insufficient	< 25	< 23
	Adequate	26–35	24–34
	Excessive	> 36	> 35
Repair	Insufficient	< 23	< 23
	Adequate	24–35	24–34
	Excessive	> 36	> 35

It was observed that females presented higher deficiencies in attention (44.5%; $X^2 = 10.62$, $p = .005$) and emotional repair (45%; $X^2 = 17.99$, $p < .001$) compared to males (28.6% and 24.5%, respectively). In addition, it was observed that first-year students showed lower levels of emotional attention (47.5%; $X^2 = 20.94$, $p < .01$) compared to the other years of study ranging from 22.5% to 38.8%.

It was also observed that 13% ($n = 52$) of the students matched the ABS diagnostic criteria (Table 3). More than 53.5% and 23.5% of the students showed severe levels of burnout and cynicism, respectively, while 48.8% presented low levels of academic efficacy. Females (17%, $n = 39$; $X^2 = 7.69$, $p < .01$) presented a higher prevalence of ABS compared to males (7.6%, $n = 13$). Second-year students showed a higher prevalence of ABS (23.7%; $X^2 = 13.17$, $p = .010$) compared to other students, ranging from 5% to 13.8% in different years. No differences were recorded according to age.

It was found that 57.6% of students with ABS showed low emotional repair ($X^2 = 12.1$, $p < .01$) (Table 3). Further, it was observed that students with higher levels of burnout presented lower emotional repair scores ($X^2 = 14.60$, $p < .01$); similarly, students with higher levels of cynicism should improve clarity ($X^2 = 16.98$, $p < .01$) and emotional repair ($X^2 = 21.28$, $p < .001$); likewise, students with low levels of academic efficacy were associated with low levels of attention ($X^2 = 33.82$, $p < .001$), clarity ($X^2 = 49.34$, $p < .001$), and emotional repair ($X^2 = 56.64$, $p < .001$).

Discussion

The present study explored the association between EI and the development of ABS in medical students. In the sample studied, evidence was found that students with higher skills in EI subscales present lower ABS symptomatology.

We found that over half of the students with inefficient emotional repair presented ABS. Similar findings have been documented in previous research on nursing students, where emotional repair was related to all dimensions of ABS.[18] Likewise, in undergraduate medical interns, it was found that ABS symptoms are related to low emotional attention and lack of clarity in their emotions, concluding that the lower the emotional skills, the higher the risk of presenting this syndrome.[19] Similarly, a study conducted among university students in the humanities found that students with high EI scores did not present indicators of burnout.[9]

All of the above suggests that EI may have a protective effect by contributing to better well-being and mental health since the better the emotional states are regulated, the lower the probability of developing ABS.[8,18] This is because EI favors the development and increase of positive

Table 2 Distribution of emotional intelligence components in medical students.

	Insufficient	Adequate	Excellent
Emotional attention	151 (37.8%)	194 (48.5%)	55 (13.8%)
Emotional clarity	210 (52.5%)	143 (35.8%)	47 (11.8%)
Emotional repair	145 (36.3%)	208 (52%)	47 (11.8%)

Table 3 Association between EI subscales and ABS in medical students.

		Without ABS (n=348)	With ABS (n=52)	p-value
Emotional attention	Insufficient	127 (36.5%)	24 (46.5%)	X^2=2.47, p=.290
	Adequate	174 (50%)	20 (38.5%)	
	Excessive	47 (13.5%)	8 (15.4%)	
Emotional clarity	Insufficient	176 (50.6%)	34 (65.4%)	X^2=4.50, p=.105
	Adequate	128 (36.8%)	15 (28.8%)	
	Excellent	44 (12.6%)	3 (5.8%)	
Emotional repair	Insufficient	115 (33%)	30 (57.7%)	X^2=12.14, p<.01*
	Adequate	189 (54.3%)	19 (36.5%)	
	Excellent	44 (12.6%)	3 (5.8%)	

Values are represented as frequencies (prevalences); Chi-square test, * $p \leq .05$.

emotions, avoiding negative situations that can lead to the appearance of ABS.[13]

Regarding the results of the EI subscales, it was observed that around 40% of the students sampled had inefficient management of emotions. These data are consistent with other reports, in which it was recorded that between 26.5% and 47% of medical and nursing students show poor attention, 17.5%–38% poor clarity, and 12%–22% low levels of repair.[18,20] This may suggest a constant among students in the health field, which, as mentioned before, should be reinforced. As in previous studies, the results showed that women have lower in attention and emotional repair scores.[14] It has been suggested that this may be because women perceive their emotions with more intensity and do not have sufficient capacity to regulate them.[11]

In contrast, the prevalence of ABS observed in this study is lower compared to previous research on medical students in different areas of Mexico, such as Sinaloa (85%),[21] Mexico City (96%),[22] Zacatecas (69.8%),[1] and Nuevo León (30–54%).[23] However, it is essential to note that these findings are within the ranges reported in other studies at the national level, which range from 7% to 15%.[1,24]

Our data are consistent with previous studies reporting that women have a higher prevalence of ABS compared to men.[1,2,8,21,25] It has been described that women have greater work and social burdens inside and outside the home, suffer harassment or gender discrimination, present greater behavioral and somatic manifestations, and depend on more significant social and family support.[25,26]

It was observed that second-year students presented higher levels of ABS, differing from other studies, in which it has been reported that 100% of third-year students presented some degree of ABS.[21] Similarly, in Spain, it was found that third-year students presented a higher prevalence of ABS, except for those who were in the undergraduate internship.[27] Furthermore, in a study in Latin America, the prevalence was higher in students in the second half of the second year, the third year, and the first half of the fourth year.[8] The discrepancy between the above results and those of UJAT students may be because, when they enter the second year, they only take subjects corresponding to substantive professional training. There is an increase in the academic workload.

Taken together, this evidence indicates a possible association between EI and ABS, so future research should focus on the design and application of intervention strategies that strengthen EI in students to prevent the development of mental health problems. Despite the numerous studies on ABS in university students, little research attempts to relate it to EI variables in the field of medical students, so our study is innovative in demonstrating this association. Given the above, curricula must include training and interventions aimed at improving emotional intelligence skills, intending to promote mental health and reduce the prevalence of disorders such as burnout syndrome in this population.

A systematic review of the relationship between EI, burnout syndrome, and mindfulness (MF),[28] it was found that MF intervention programs positively modify EI-related skills, and the more MF is practiced, the lower the burnout symptoms.[28] A study on university students concluded that MF contributes to emotional awareness, stress coping, and personal burnout since having higher MF scores results in higher EI scores and lower burnout syndrome values.[29] Therefore, MF can be considered a protector factor for the appearance of ABS since it has a positive impact.

Limitations

Some limitations of this study are the size of the sample and its cross-sectional design because data were collected at a spatiotemporal moment and could not cover the entire length of the academic year. Additionally, the need for more research on emotional intelligence and its relationship with ABS in the Mexican context makes it difficult to establish a relevant contrast. It is considered necessary to inquire further into some other sociodemographic factors to know whether predisposing or protective factors are involved in developing emotional intelligence and ABS. In addition, longitudinal studies should be considered to corroborate whether they are maintained or modified throughout the university career, together with the application of intervention strategies to strengthen students' emotional skills.

Conclusions

In conclusion, this study identifies an association between emotional intelligence skills and burnout syndrome in the studied population. In the same way, ABS has been presented since the early academic years. Furthermore, a large part of the population studied needs to improve the

management of their emotions. Therefore, it is essential to develop and implement intervention programs, such as mindfulness, to promote EI development, enhance well-being, and to avoid situations conducive to the onset of ABS.

Funding

No financing was received.

Ethical responsibilities

The present study was approved by the Institutional Research Ethics Committee of the Universidad Juárez Autónoma de Tabasco. All participants were previously informed of the purpose of the research, as well as of their voluntary participation, using informed consent, which they accepted before answering the instruments.

Previous presentations

The authors declare that the results of this article have not been previously presented.

Statement of acceptance

All authors accept the latest version and publication of the manuscript.

Declaration of competing interest

The authors declare that they have no conflicts of interest.

Acknowledgements

To the authorities Universidad Júarez Autónoma de Tabasco for the facilities granted for the realization and conclusion of this study.

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