

Empathy and burnout of emergency professionals of a health region

A cross-sectional study

Oriol Yuguero, MD, PhD^{a,b,*}, Carles Forné, MSc^{c,d}, Montserrat Esquerda, MD, PhD^{b,e}, Josep Pifarré, MD, PhD^{b,f}, María José Abadías, MD^a, Joan Viñas, MD, PhD^g

Abstract

The objective of this study is to assess the association between levels of empathy and burnout of emergency professionals in all the assistance levels.

A cross-sectional observational study was conducted in the health region of Lleida and the Pyrenees with 100 professionals from the field of Urgency. Participation reached 40.8%. Empathy and burnout were measured using the Spanish versions of the Jefferson Scale of Physician Empathy (JSPE) and Maslach Burnout Inventory (MBI) respectively. The total MBI score and its 3 dimensions (emotional exhaustion, depersonalization, and personal accomplishment) were analyzed. The JSPE and MBI scores were categorized into tertiles that were identified as “low,” “moderate,” and “high” levels.

The median (interquartile range) was 112 (102–123) and 37 (27–53.5) for the JSPE and MBI scores respectively. Professionals with high burnout ($MBI \geq 47$) showed the lowest levels of empathy, that is, JSPE score of 105 (98–114); those with moderate burnout ($31 \leq MBI < 47$) had a JSPE score of 114 (104.5–120.5); and those with low burnout ($MBI < 31$) had a JSPE score of 120.5 (105.8–127.2). In addition, the highest levels of empathy were associated with the lowest levels of burnout, especially in depersonalization, and to a lesser extent in personal accomplishment. There were no differences in empathy and burnout for any of the other study variables.

Our findings suggest that the empathy of emergency professionals is associated with burnout. Hence, reducing professional burnout could help keep emergency professionals' empathy levels high, which in turn would ensure a better quality of care. Nevertheless, it would be necessary to carry out prospective studies to describe the profiles of burnout and empathy as well as their association and evolution.

Abbreviations: ED = emergency department, IQR = interquartile range, JSPE = Jefferson Scale of Physician Empathy, MBI = Maslach Burnout Inventory, MBI-DP = depersonalization (dimension of MBI), MBI-EE = emotional exhaustion (dimension of MBI), MBI-PA = personal accomplishment (dimension of MBI), UHAV = University Hospital Arnau de Vilanova.

Keywords: bioethics, burnout, doctor–patient communication, emergency department, empathy, quality of care

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OY and CF contributed equally to this work.

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^aEmergency Service, University Hospital Arnau de Vilanova, Lleida, ^bBiomedical Research Institute of Lleida (IRBLleida), ^cBiostatistics Unit, Biomedical Research Institute of Lleida (IRBLleida), ^dDepartment of Basic Medical Sciences, University of Lleida, Lleida, ^eBorja Institute of Bioethics, Barcelona, ^fMental Health Service, University Hospital Santa Maria, ^gFaculty of Medicine, University of Lleida, Lleida, Spain.

*Correspondence: Oriol Yuguero, Servicio de Urgencias, Hospital Universitario Arnau de Vilanova de Lleida, Av. Alcalde Rovira Roure, 80, 25198 Lleida, Spain (e-mail: oriol.yuguero@gmail.com).

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1. Introduction

The emergency department (ED) is a place of stress and multidisciplinary work, with situations linked to a vital risk for patients in many cases. The surveys of quality and satisfaction of patients with health care in Spain (PLAENSA),^[1] specifically in the field of Urgency, show the importance of the relationship with the patient as well as the management of information and the confidence shown by the health professional, where empathic skills are fundamental. Empathy has been described as the ability to understand each other's feelings and thoughts and to communicate that understanding.^[2] There are many benefits in terms of communication, satisfaction, and therapeutic compliance described with the most empathic professionals.^[3–5] Studies on empathy in EDs have focused mainly on nursing staff.^[6] Further, its impact on issues of litigation^[7] or relation with the religiosity of professionals^[8] has also been studied. Researchers at the Yale University^[9] looked at whether the empathic ability of emergency room professionals could have an impact when seeking complementary imaging tests.

In recent years, there has been an increase in the number of people seeking health care, both in the Hospital EDs and continuing care centers, which can lead to professional burnout. Thus, the degree of burnout has become particularly relevant as

professionals have been exposed to greater workload and increased social pressure. The burnout syndrome described by Maslach has 3 dimensions that define it: emotional exhaustion, personal accomplishment, and depersonalization of the doctor–patient relationship.^[10] A study in a United Kingdom hospital described hospital EDs as places with higher occupational stress than other medical services.^[11] Another work published in 2015 described that urgent care services could lead to burnout among their professionals.^[12] Up to now, burnout levels have been reported in medical students, residents, nursing staff, health technicians, and prehospital care professionals.^[13–15]

Recent researches have aimed to identify the association between empathy and burnout. A comment published in the *Mayo Clinic Proceedings* journal^[16] reflected on the importance of the empathic ability of health professionals in times of burnout, considering the burden of care, pressure of health managers, and demands of patients, which in many cases have worsened their socioeconomic conditions. A previous study in Lleida on primary care professionals^[17] showed that higher levels of empathy are associated with lower burnout. However, the association between burnout and empathy in the whole ED staff has not been analyzed. Nevertheless, we propose this study with the objective of assessing the association between empathy and burnout in ED professionals to promote occupational policies in the future.

2. Materials and methods

2.1. Participants and study design

This was a cross-sectional observational study conducted in the health region of Lleida and the Pyrenees. In this health region, there are 5 public hospitals, 3 in mountainous districts, and 2 in the city of Lleida: 1 chronicity-oriented and without an ED and the University Hospital Arnau de Vilanova (UHAV). The UHAV, with 470 beds, is oriented to processes of greater complexity, and is the only hospital with an ED in the city and reference of the territory. These hospitals serve a population of more than 400,000 people. There are also 12 continuous care centers in primary care and 6 mobile units of outpatient emergencies.

All the medical professionals and nurses of the health region who work in public emergency care centers were contacted by emails. At the time of the survey there were 245 professionals working in the centers described above, and a response rate of 40.8% was reached. Participants who voluntarily agreed to participate completed an anonymous survey on burnout and empathy between May and September 2016. Data were anonymized to ensure confidentiality.

2.2. Instruments and variables

2.2.1. Assessment of empathy. Empathy was measured using the Spanish version of the Jefferson Scale of Physician Empathy (JSPE).^[18,19] In the JSPE, respondents indicate how strongly they agree, on a scale of 1 to 7, with each of the 20 empathy-related statements in patient care settings. Higher scores in the JSPE indicate more empathy.

2.2.2. Assessment of burnout. Burnout was measured using the Maslach Burnout Inventory (MBI)^[20] in the version validated in Spanish^[21] and previously used in other studies.^[17,22,23] The MBI is an instrument of 22 Likert items of 7 points on feelings related to work. Respondents rate how often they experience these feelings on a scale of 0 (never) to 6 (every day). The MBI includes 3 subscales or dimensions: emotional exhaustion (MBI-EE), depersonalization (MBI-DP), and personal accomplishment

(MBI-PA). High scores in MBI-EE and MBI-DP and low in MBI-PA correspond to high levels of burnout.

2.2.3. Other variables. The following sociodemographic data were recorded: age, sex, profession (emergency medical doctor or nurse), place of professional practice (regional hospital, second-level healthcare hospital, primary care, or outpatient care), years worked in ED, and compatibility with another workplace.

2.3. Statistical analysis

Quantitative variables (MBI and JSPE scores) were described with medians and interquartile ranges (IQR), as they showed a non-normal distribution. Qualitative variables were described with absolute and relative frequencies. The reliability of the MBI and JSPE scales was assessed using the Cronbach alpha. The correlation between the MBI and JSPE scores was assessed by calculating the Spearman rho.

The JSPE and MBI scores were categorized into tertiles identified as “low,” “moderate,” and “high” levels. Bivariate analyses were performed between all the study variables and levels of burnout and empathy. Quantitative variables were analyzed using the Kruskal–Wallis test and the Spearman test for trend. Qualitative variables were analyzed using the Pearson χ^2 test. Additionally, for the ordinal variables, the χ^2 test for trend was also obtained. In the case of global significant differences, post-hoc pairwise comparisons were made by adjusting the *P* value by the Benjamini–Hochberg method. All the tests were bilateral, setting the significance level to .05. All the analyses were conducted using R (R Development Core Team).

2.4. Ethical considerations

The study was approved by the Clinical Research Ethics Committee of the Jordi Gol Institute for Primary Care Research. Maintenance of confidentiality and anonymity of the data was in accordance with the Spanish Data Protection Act 15/1999. Since the database was anonymous, the researchers were unable to identify the study participants at any time.

3. Results

The characteristics of the 100 professionals participating in this study are shown in Table 1. Compared to the nonparticipant population, the study sample included more physicians and workers of the second level hospital. There were no differences in other characteristics (Table S1, Supplemental Material 1, <http://links.lww.com/MD/B859>, which shows the comparison between participants and nonparticipants).

The reliability of the scales used was good, except for MBI-DP (Cronbach alpha: .842 for JSPE, .861 for MBI, .887 for MBI-EE, .514 for MBI-DP, .820 for MBI-PA). The median (IQR) JSPE score was 112 (102–123), while for the overall MBI score it was 37 (27–53.5). The JSPE scores were significantly correlated with the burnout scales, except for MBI-EE (Spearman rho (*P* value): $-.323$ (.001) with MBI, $-.194$ (.053) with MBI-EE, $-.309$ (.002) with MBI-DP, $.271$ (.006) with MBI-PA).

Table 2 shows the association between burnout and other variables. Significant differences were observed with empathy, with the highest burnout professionals showing the lowest empathy. Figure 1 shows the differences in the distribution of the JSPE score and the trend according to burnout levels. The results of the analysis by empathy levels (Table 3) confirm that the less empathic professionals showed higher levels of burnout,

Table 1
Description of study sample.

Variable	N = 100
Place of work	
Hospital of 2nd level	56 (56.0%)
Outpatient emergency care	22 (22.0%)
Primary emergency care	10 (10.0%)
Regional hospital	12 (12.0%)
Profession	
Nurse	57 (57.0%)
Physician	43 (43.0%)
Sex = woman	67 (67.0%)
Age groups	
<30	11 (11.0%)
30–39	37 (37.0%)
40–49	30 (30.0%)
50–59	22 (22.0%)
Worked years	
<5	17 (17.0%)
5–10	27 (27.0%)
11–15	25 (25.0%)
16–20	21 (21.0%)
21+	10 (10.0%)
Other occupation = yes	39 (39.8%)
MBI score	37.0 (27.0–53.5)
MBI-EE	19.0 (13.0–29.0)
MBI-DP	6.5 (4.0–10.0)
MBI-PA	39.0 (33.8–43.0)
JSPE score	112.0 (102.0–123.0)

Median (IQR) for quantitative variables, frequencies (%) for qualitative variables.

Missing data [variable (n)]: Other occupation (2).

MBI = Maslach Burnout Inventory, MBI-EE = emotional exhaustion, MBI-DP = depersonalization, MBI-PA = personal accomplishment, JSPE = Jefferson Scale of Physician Empathy, IQR = interquartile range.

especially in depersonalization, and to a lesser extent in personal accomplishment (Fig. 2).

4. Discussion

Empathy of the professionals in the ED is associated with burnout. Those with higher levels of burnout have lower levels of empathy. Previous studies have analyzed either empathy^[6–9] or burnout^[11,12,14,15] among emergency professionals. The relationship between empathy and well-being has been studied, although only in medical students,^[13] certain groups of professionals, such as physicians of different specialities,^[24] emergency nurses,^[6] or in primary care.^[17] Thus, in contrast with our previous work and other previous studies, the main contribution of the present study is that it is the first to assess the association between burnout and lack of empathy in all the emergency professionals, both physicians and nurses, from different levels of health care.

It is important to consider that the ED is often the first contact of citizens with the health system—between 50% and 70% of hospital admissions are from the ED^[25]—so, it determines in an important way the image that citizens have of hospitals. Although the assessment of patients on the care provided in the ED shows a high satisfaction, there are points of improvement, especially in aspects such as intimacy, waiting time and information, and relationship with the patient.^[1] In an area such as the ED, where patients and their families experience highly stressful situations with added pressure and uncertainty, empathic and communicational abilities of professionals are essential. In addition to promoting and improving communicative skills, it must be considered that the empathy of emergency professionals is essential to avoid unnecessary tests and improve patient care.^[16]

Table 2
Association between burnout and other variables.

Variable	Level of burnout (MBI)*			Global test	Trend test
	Low N = 36	Medium N = 31	High N = 33		
Place of work				.353	
Hospital of 2nd level	17 (47.2%)	16 (51.6%)	23 (69.7%)		
Outpatient emergency care	8 (22.2%)	8 (25.8%)	6 (18.2%)		
Primary emergency care	5 (13.9%)	2 (6.5%)	3 (9.1%)		
Regional hospital	6 (16.7%)	5 (16.1%)	1 (3.0%)		
Profession				.323	
Nurse	18 (50.0%)	21 (67.7%)	18 (54.5%)		
Physician	18 (50.0%)	10 (32.3%)	15 (45.5%)		
Sex = woman	23 (63.9%)	23 (74.2%)	21 (63.6%)	.591	
Age group				.061	.693
<30	7 (19.4%)	2 (6.5%)	2 (6.1%)		
30–39	6 (16.7%)	16 (51.6%)	15 (45.5%)		
40–49	13 (36.1%)	8 (25.8%)	9 (27.3%)		
50–59	10 (27.8%)	5 (16.1%)	7 (21.2%)		
Worked years				.585	.303
<5	8 (22.2%)	2 (6.5%)	7 (21.2%)		
5–10	7 (19.4%)	10 (32.3%)	10 (30.3%)		
11–15	8 (22.2%)	8 (25.8%)	9 (27.3%)		
16–20	8 (22.2%)	8 (25.8%)	5 (15.2%)		
21+	5 (13.9%)	3 (9.7%)	2 (6.1%)		
Other occupation = yes	16 (45.7%)	13 (43.3%)	10 (30.3%)	.385	
JSPE score	120.5 (105.8–127.2)	114.0 (104.5–120.5)	105.0 (98.0–114.0)	.010	.002
Tertiles of JSPE				.017	.003
[47,106] = Low Empathy	9 (25.0%)	9 (29.0%)	17 (51.5%)		
[106,121] = Moderate Empathy	9 (25.0%)	14 (45.2%)	10 (30.3%)		
[121,140] = High Empathy	18 (50.0%)	8 (25.8%)	6 (18.2%)		

Median (IQR) for quantitative variables, frequencies (%) for qualitative variables.

Missing data [variable (n)]: Other occupation (2).

MBI = Maslach Burnout Inventory, JSPE = Jefferson Scale of Physician Empathy, IQR = interquartile range.

* The levels of burnout correspond to tertiles of the MBI total score: Low = [4,31]; Moderate = [31,47]; High = [47,78].

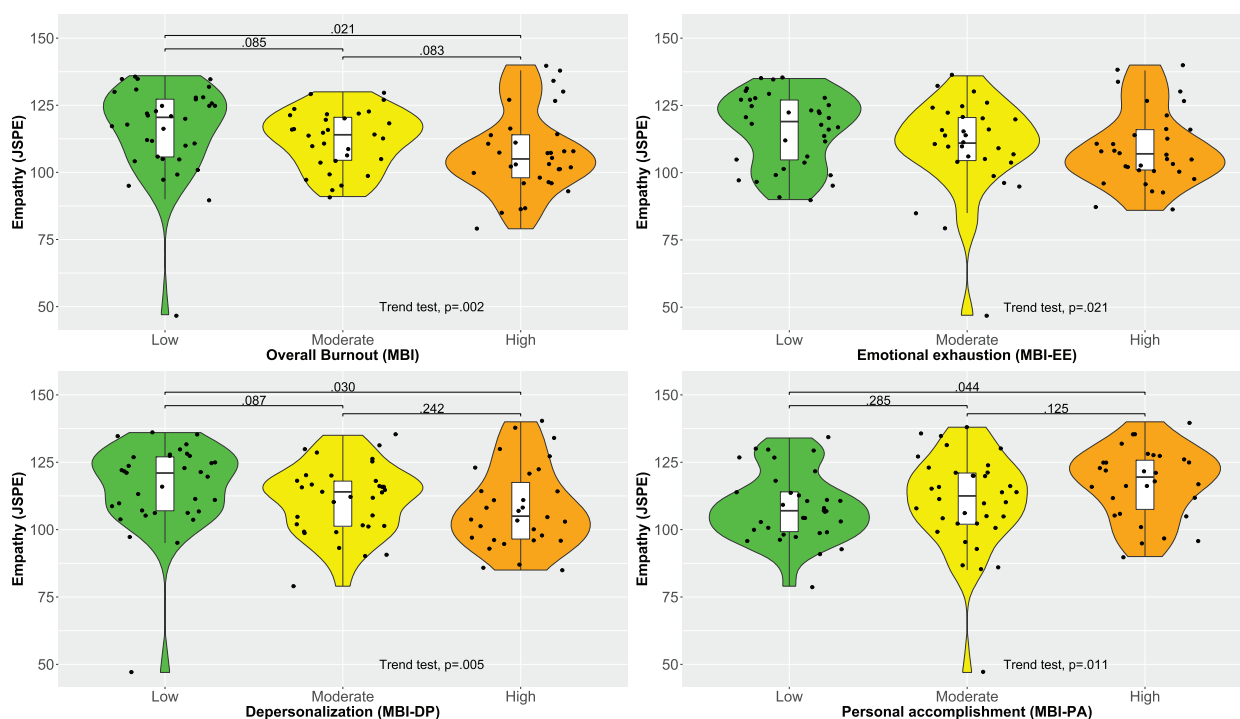


Figure 1. Distribution and trend of empathy (JSPE) according to burnout levels (MBI). Violin plots show the probability density of the individual data (dots). Standard boxplots are also shown. MBI levels: Low = [4, 31]; Moderate = [31, 47]; High = [47, 78]. MBI-EE levels: Low = [3, 15]; Moderate = [15, 27]; High = [27, 45]. MBI-DP levels: Low = [0, 5]; Moderate = [5, 10]; High = [10, 23]. MBI-PA levels: Low = [8, 36]; Moderate = [36, 42]; High = [42, 48]. JSPE= Jefferson Scale of Physician Empathy, MBI=Maslach Burnout Inventory.

Table 3

Association between empathy and other variables.

Variable	Level of empathy (JSPE) [®]			Global test	Trend test
	Low N=35	Medium N=33	High N=32		
Place of work				.161	
Hospital of 2nd level	22 (62.9%)	13 (39.4%)	21 (65.6%)		
Outpatient emergency care	9 (25.7%)	9 (27.3%)	4 (12.5%)		
Primary emergency care	1 (2.9%)	6 (18.2%)	3 (9.4%)		
Regional hospital	3 (8.6%)	5 (15.2%)	4 (12.5%)		
Profession				.235	
Nurse	21 (60.0%)	15 (45.5%)	21 (65.6%)		
Physician	14 (40.0%)	18 (54.5%)	11 (34.4%)		
Sex = woman	22 (62.9%)	20 (60.6%)	25 (78.1%)	.263	
Age groups				.291	.432
<30	5 (14.3%)	3 (9.1%)	3 (9.4%)		
30-39	11 (31.4%)	9 (27.3%)	17 (53.1%)		
40-49	12 (34.3%)	10 (30.3%)	8 (25.0%)		
50-59	7 (20.0%)	11 (33.3%)	4 (12.5%)		
Worked years				.108	.344
<5	7 (20.0%)	3 (9.1%)	7 (21.9%)		
5-10	6 (17.1%)	9 (27.3%)	12 (37.5%)		
11-15	13 (37.1%)	5 (15.2%)	7 (21.9%)		
16-20	7 (20.0%)	10 (30.3%)	4 (12.5%)		
21+	2 (5.7%)	6 (18.2%)	2 (6.2%)		
Other occupation = yes	12 (34.3%)	16 (51.6%)	11 (34.4%)	.267	
MBI score	45.0 (31.0-61.5)	37.0 (30.0-47.0)	29.0 (22.0-38.8)	.007	.001
Tertiles of MBI				.017	.003
[4,31]=Low	9 (25.7%)	9 (27.3%)	18 (56.2%)		
[31,47]=Moderate	9 (25.7%)	14 (42.4%)	8 (25.0%)		
[47,78]=High	17 (48.6%)	10 (30.3%)	6 (18.8%)		
MBI-EE score	22.0 (13.5-32.0)	19.0 (14.0-28.0)	14.0 (12.0-22.5)	.124	.040

(continued)

Table 3
(continued).

Variable	Level of empathy (JSPE)*			Global test	Trend test
	Low N = 35	Medium N = 33	High N = 32		
Tertiles of MBI-EE				.064	.018
[3,15]=Low	10 (28.6%)	9 (27.3%)	17 (53.1%)		
[15,27]=Moderate	9 (25.7%)	14 (42.4%)	8 (25.0%)		
[27,45]=High	16 (45.7%)	10 (30.3%)	7 (21.9%)		
MBI-DP score	8.0 (5.5–12.5)	6.0 (4.0–9.0)	4.0 (2.0–8.5)	.005	.001
Tertiles of MBI-DP				.005	.003
[0,5]=Low	6 (17.1%)	11 (33.3%)	18 (56.2%)		
[5,10]=Moderate	13 (37.1%)	15 (45.5%)	6 (18.8%)		
[10,23]=High	16 (45.7%)	7 (21.2%)	8 (25.0%)		
MBI-PA score	36.0 (31.0–41.0)	37.0 (33.0–41.0)	40.0 (36.8–44.0)	.056	.019
Tertiles of MBI-PA				.129	.016
[8,36]=Low	15 (42.9%)	12 (36.4%)	7 (21.9%)		
[36,42]=Moderate	13 (37.1%)	13 (39.4%)	10 (31.2%)		
[42,48]=High	7 (20.0%)	8 (24.2%)	15 (46.9%)		

Median (IQR) for quantitative variables, frequencies (%) for qualitative variables.

Missing data [variable (n)]: Other occupation (2).

MBI=Maslach Burnout Inventory, MBI-EE=emotional exhaustion, MBI-DP=depersonalization, MBI-PA=personal accomplishment, JSPE=Jefferson Scale of Physician Empathy, IQR=interquartile range.

*The levels of empathy correspond to tertiles of the JSPE score: Low=[47,106]; Moderate=[106,121]; High=[121,140].

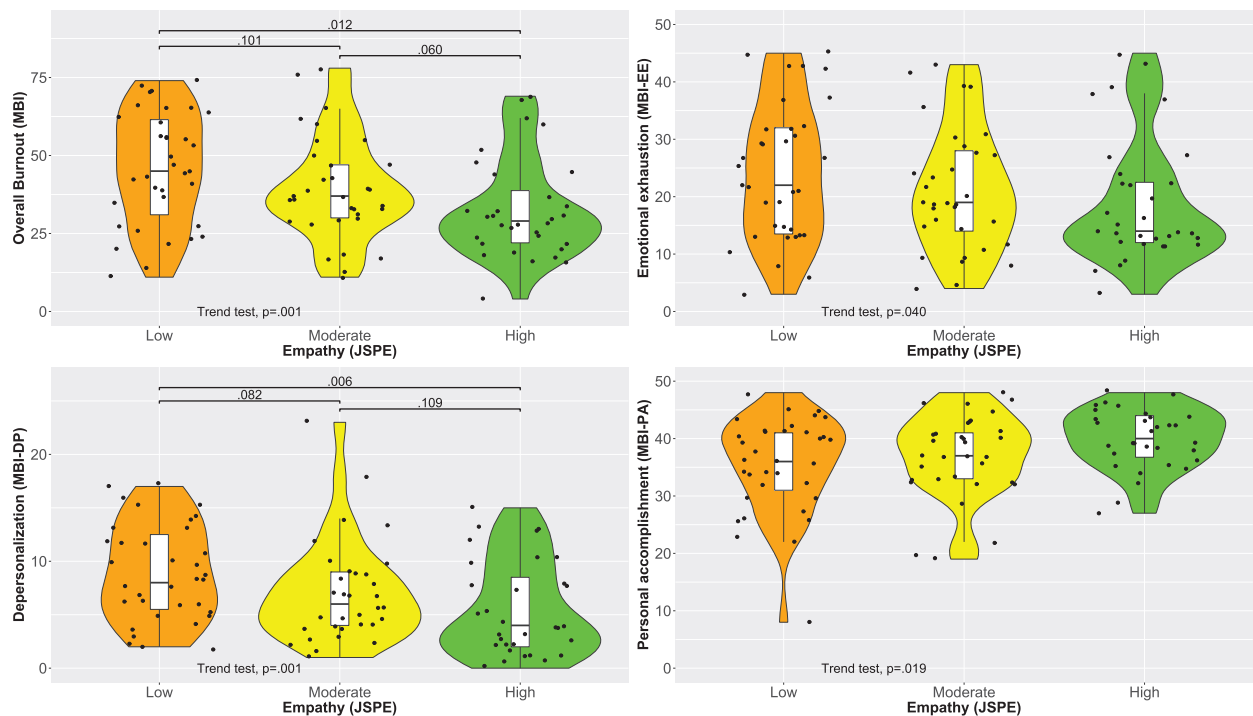


Figure 2. Distribution and trend of burnout (MBI) according to empathy levels (JSPE). Violin plots show the probability density of the individual data (dots). Standard boxplots are also shown. JSPE levels: Low=[47, 106]; Moderate=[106, 121]; High=[121,140]. JSPE=Jefferson Scale of Physician Empathy, MBI=Maslach Burnout Inventory.

We believe that the findings of our study are important because they show that high levels of burnout are associated with lower levels of empathy in emergency professionals. A heavier workload in the ED can lead to situations of high tension that reduce the empathic ability of the professionals, thus affecting the humane treatment and care that must be given to the patient in the emergency room.^[26] There are proven strategies to prevent and address burnout syndrome in both professionals and students of medicine or nursing.^[27] In addition, interventions aimed at

reducing stress could not only reduce burnout, but also improve team cohesion and emotional well-being,^[28] a fact that clearly translates into an improvement in the quality of services.^[29]

The cross-sectional design of the study supposes its major limitation, since it does not allow establishing of causal relations between empathy and burnout. In addition, we would like to point out that the present study might be underpowered regarding the (unknown) true effect size, in case that the (unknown) true effect was lower than the observed effect size.

The participation rate (40.8%) could also entail a risk for the representativeness of the sample and, as consequence, a high risk of selection bias. We considered using multivariable multinomial models to correct for confounding biases. We obtained a significant association between empathy and depersonalization, and a nearly significant association between empathy and personal accomplishment, that became statistically significant when we adjusted for other study variables, like age (results not shown). Emotional exhaustion never showed statistical significance, maybe as consequence of lack of statistical power. Although probably an increased burnout implies loss of empathy, the mechanism of action could be the opposite direction, or even “circular.” Moreover, the effect could be different by levels of health care. Therefore, this study should be considered a pilot study that opens a future line of research that promotes properly designed prospective studies, including a sample size determination based on a realistic hypothesized effect size chosen from a systematic literature review—being aware that these past estimates will themselves tend to overestimate the true effect—and clinical relevance. Such new studies should be able to better describe the empathy and burnout profiles and their associations.

On the other hand, although this study used instruments adapted and validated in our environment and widely used to assess empathy and burnout, both the JSPE and MBI, as well as other psychometric instruments, show certain weaknesses.^[30,31] The reliability of the scores in our population was good, except for the depersonalization dimension of MBI, as has been observed in other studies, especially in non-English-speaking populations.^[31] Despite the low reliability in the depersonalization dimension, we did not consider deleting items from the questionnaire to improve reliability. The international acceptance of the MBI is an advantage, since it allows comparison of results, development of strategies for prevention, and treatment of the disorder, while encouraging the development of adaptations of the questionnaire.^[31]

Our findings suggest that the empathy of emergency professionals is associated with burnout. Hence, reducing professional burnout could help keep emergency professionals' empathy levels high, which in turn would ensure a better quality of care. To identify interventions aimed at reducing burnout and maintaining high or increasing empathy, it would be necessary to carry out prospective studies to describe the profiles of burnout and empathy as well as their association and evolution.

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