

## Depersonalization in the Emergency Service: Frequency of Professional Burnout

Hugo Eduardo Guerrero-Topete <sup>1</sup>, Lomelí González Joel <sup>2</sup>, Ma. Natalia Gómez-González <sup>3</sup>, Rita Viviana Ruiz-Alanis <sup>4</sup>, Dania Nimbe Lima-Sánchez <sup>5</sup>

<sup>1</sup>Critical Care Medicine and Emergency Medicine Physician. Instituto Mexicano del Seguro Social, Unidad Médica de Alta Especialidad, Hospital de Especialidades No. 1, Centro Médico Nacional del Bajío (IMSS, UMAE HE No. 1 CMN), León, Guanajuato, Mexico. Intensive Care Unit

<sup>2</sup>Doctor of Science. Coordinator of the Neurosciences Area, Doctorate in Research in Medicine, Laboratory of Human Neurophysiology and Motor Control. Escuela Superior de Medicina del Instituto Politécnico Nacional. Postgraduate and Research Section.

<sup>3</sup>Master's degree in clinical research, Critical Care Medicine and Anesthesiologists Physician. IMSS, UMAE HE No. 1 CMN, León, Guanajuato. Mexico. Intensive Care Unit.

<sup>4</sup>Master's Degree in Senior Management, Specialist in Emergency Medicine. Head of the specialty of Emergency Medicine. IMSS, Hospital General Regional No. 1 (HGR No.1), "Dr. Carlos MacGregor Sánchez Navarro. Ciudad de México.

<sup>5</sup>Master of Science Specialist in Psychiatry, Associate Academic Technician C, Department of Biomedical Informatics. Facultad de medicina de la Universidad Autónoma de México, Ciudad de México.

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### ABSTRACT

**Introduction:** "Burnout is a syndrome of emotional exhaustion, depersonalization and reduced personal fulfillment that can occur among individuals whose object of work is other people". Burnout syndrome is considered a mental health problem, with social and somatic repercussions. The objective was: to identify the group of workers most affected by Burnout in the Emergency Department. **Material and methods.** Observational, descriptive, cross-sectional and analytical study, carried out in the Emergency Department of the HGR No.1 Dr. Carlos Macgregor, Mexico City, from November 2019 to January 2020. The sample was simple randomized, with 139 subjects. In inferential statistics analysis was performed using Chi-square and Pearson's correlation; multiple linear regression model was performed, including depersonalization as a response variable. **Results.** The distribution of the cases was: severe burnout 2.88%, moderate burnout 5.76%, mild burnout 16.55%. The work group most affected by burnout syndrome was the residents. There is no relationship between gender and burnout, the correlation between hours worked per week and depersonalization was moderate ( $r = 0.2788$ ,  $p 0.001$ ), there is a negative correlation between age and depersonalization scale ( $r = -0.268$ ,  $p 0.002$ ), from the linear regression model it stands out that the days off per week are inversely proportional to depersonalization with a variance of 3.93% of the result. Conclusions: There is a statistically significant association between the greater number of hours worked per week, fewer days of rest, less seniority, mixed work shifts and occupation with the presence of burnout, being considered predisposing factors for the development of the syndrome. The regression model is valid, so that the variables included have a direct association with the presence of the disease.

**KEYWORDS:** Emergency medicine, resident physicians, depersonalization, burnout, professional burnout.

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## I. INTRODUCTION

Health professionals are constantly confronted with complex tasks in various circumstances: the specific stressors of the profession that involve a high emotional involvement and those related to the organization of the work: aversive stimulation, frustration due to the natural course of the disease towards death, to mention a few. [1-4]

Burnout syndrome is currently considered a mental health problem affecting the working population; suffering from Burnout may be accompanied by certain degrees of depression as well as chronic anxiety, character disorders, which may lead to suicide, violence and addictions, as well as various somatic alterations. [2, 3, 5]

In 2015, the World Health Organization, together with the Pan American Health Organization and the International Labor Organization, declared Mexico as the first place in cases of Burnout syndrome with 75% of the total working population, followed by China with 73% and in third place USA with 59%, in this context publications of the same organizations in 2015 and 2016, state that: "Job stress is able to reduce motivation, commitment and job performance; and produce an increase in absenteeism, staff turnover and early retirement. Which leads to decrease productivity, competitiveness and public image of organizations." [6-9]

Despite being a growing disease, Burnout Syndrome is not recognized in the Diagnostic and Statistical Manual of Mental Disorders (DSM), although it is briefly mentioned in the International Classification of Diseases, but under the section associated with "problems related to coping with life difficulties". 33. In some countries, patients with Burnout are diagnosed with Neurasthenia syndrome, provided that their symptoms are associated with work, considering it, therefore, as a form of mental illness. [5, 8, 9]

However, there is little information available in the emergency medical environment, and no studies with the same characteristics of this research have been found.

It is essential to carry out diagnostic tests for Burnout syndrome once a year after knowing the incidence, following up the cases found and monitoring their behavior with the prevention and treatment strategies used to improve the mental health of workers and provide better care to patients. [2, 3, 10, 11]

## II. MATERIAL AND METHODS

This is an observational, descriptive, transversal and analytical study. It was conducted at the Emergency Department of the Hospital General Regional No. 1 (HGR No. 1) "Dr. Carlos MacGregor Sánchez Navarro", of the Instituto Mexicano del Seguro Social (IMSS), in Mexico City. The population consisted of personnel working in the Emergency Department of HGR 1, registered in the authorized payroll, with a total of 321 workers constituting the study universe. The sample was of the probabilistic type, simple random stratified as follows: Stratum 1 Emergency Medicine Physician, Stratum 2 Nurses and Stratum 3 Residents. A total of 139 subjects were included and were given a Likert-type survey for the evaluation of

Burnout. Excluding staff with administrative duties (head of service, medical assistants, social workers), undergraduate students in the medical and nursing area, with elimination of incomplete questionnaires, or with more than one answer per question. The period was from November 2019 to January 2020 (complete collection of the calculated sample).

The primary objective was to identify the group of workers most affected by Burnout in the Emergency Department. The secondary objectives were: to determine the incidence of Burnout according to sociodemographic variables; to correlate the number of working hours and length of service with the presence of Burnout.

### Method

Once the study sample was selected, an individual questionnaire was provided with instructions on how to fill it out; the questionnaire consisted of two parts; the first part corresponded to general data: age, sex, position, working hours per week, shift and seniority; The second part of the questionnaire corresponds to the Maslach Burnout Inventory questionnaire (**Annex 1**) which has already been validated internationally 14, responding according to the frequency with which the symptoms of the questionnaire are presented in their daily work, these are listed from 0 to 6, the answer "0 never" refers to never having presented such symptoms, 1 a few times a year, 2 once a month or less, 3 a few times, 4 once a week, 5 a few times a week, 6 almost every day.

The principal investigator was present during the completion of the questionnaire to clarify doubts.

Once the questionnaire had been answered, it was evaluated, taking into account the different areas that make up the questionnaire, which are distributed by items as follows:

Questions corresponding to each scale:

- Emotional fatigue: 1, 2, 3, 6, 6, 8, 13, 14, 14, 16, 20.
- Depersonalization: 5, 10, 11, 15, 22.
- Personal fulfillment: 4, 7, 9, 12, 17, 18, 19, 21.

There are three well-defined scales, which are described below:

- Emotional Fatigue Scale. It consists of 9 questions. It assesses the experience of being emotionally exhausted by the demands of work. Maximum score 54 (Low 1-27 points; High 28-54 points).
- Depersonalization scale. It is made up of 5 items. It assesses the degree to which one recognizes attitudes of coldness and detachment. Maximum score 30 (Low 1-15 points; High 16-30 points).
- Scale of personal accomplishment. It is composed of 8 items. It evaluates feelings of self-efficacy and self-fulfillment at work. Maximum score 48 (Low 1-24 points; High 25-48 points) (Annex 1).

The survey was rated independently for each scale, and certain criteria are posed for the classification of the presence or not of the disease; these criteria are:

- If personal realization has a high score and the other 2 scales have a low score, the result is Healthy.

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- If all three scales have a low score, the result is Risk.
- If personal accomplishment scores high and only 1 scale scores high, the result is Risk.
- If Personal Accomplishment scores high and the other two scales score high, the result is Mild Sick.
- If self-actualization scores low and only 1 scale scores high, the result is Moderately Sick.
- If self-realization has a low score and the other two scales have a high score, the result is Severe Sick.

Data collection was done using an instrument designed by the researchers for this study, which was pilot-tested for quality control.

### Statistical analysis

The information was processed using the SPSS program. The results are presented in frequency distribution tables and graphs to facilitate their evaluation. Descriptive statistics were used to obtain measures of central tendency (median, standard deviation and range for discrete variables, mean and frequencies for nominal variables). The Kolmogorov-Smirnov test was performed.

Cross-table analysis was carried out using Chi-square ( $X^2$ ); Pearson or Spearman correlation depending on the sample distribution. A multiple linear regression model was

constructed, having as response variable the score obtained on the depersonalization scale (considered the scale with the highest severity within the test) and as predictor variables: age, work seniority, days off per week, working hours per week, emotional fatigue scale score and personal fulfillment.

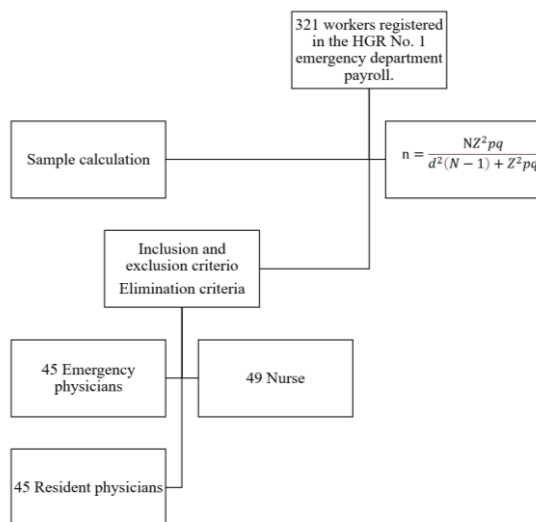
The value of  $p < 0.05$  is taken for statistical significance.

The present study is considered No Research Risk in accordance with the regulations of the general health law on health research. After signing the informed consent, it was explained to them that this is a study that aims to know the attitudes of the workers in their work area, safeguarding their data and without interventions derived from the results of the questionnaire. This work was carried out with the approval of the ethics and institutional research committees with registration number: **R-2020-3609-007**.

## III. RESULTS

According to the authorized payroll for the Hospital General Regional No.1 "Dr. Carlos MacGregor Sánchez Navarro", 321 workers were registered, of which 126 were physicians, 125 nurses, 50 residents and 20 undergraduate interns. The calculated sample was 139, which was obtained according to the finite sample calculation<sup>3</sup>, which were chosen randomly (Figure 1).

**Figure 1.** Flow chart of patients included in the study.



Of the participants, 54.58% (n=76) were female and 45.32% were male (n=63). The median age of the participants was 33 years, interquartile range (IQR) 10. According to marital status, 47.48% were single and 52.52% were married. The distribution by occupation was dominated by nurses with 32.5% (n=49), the same number of physicians specialized in emergency medicine and emergency residents n=45 for each group (32.37%) constituting a homogeneous distribution. The group of residents was evaluated by grade with 14.39% for third year residents (n=20), second year residents 9.35% (n=13) and first year residents 8.63% (n=12). (Table 1)

When evaluating the variable related to the work shift, the mixed shift predominated with 32.37% (n=45), followed by the morning shift 21.58% (n=30), evening shift 19.42% (n=27), night shift 16.55% (n=23) and accumulated shift (Saturday and Sunday) 10.07%. The median number of hours worked per week was 40, interquartile range (IQR) 44. The median number of days off per week was 2, IQR 0 days. The median length of service was 5 years, IQR 10 years, standard deviation 7.77 (Table 1).

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**TABLE I.** Demographic characteristics of the population, length of stay, days of mechanical ventilation

	n	%
<b>SEX</b>		
Female	76	54.58
Male	63	45.32
<b>CIVIL STATUS</b>		
Single	66	47.48
Married	73	52.52
<b>OCCUPATION</b>		
Nurse	49	35.25
Emergency physician	45	32.37
Resident Physician 3er	20	14.39
Resident Physician 2do	13	9.35
Resident Physician 1er	12	8.63
<b>WORKING SHIFT</b>		
Morning	30	21.58
Afternoon	27	19.42
Nocturnal	23	16.55
Accumulated Journey	14	10.07
Mixed	45	32.37
<b>AGE</b>		
Median		33
IQR		10
<b>HOURS WORKED PER WEEK</b>		
Median		40
IQR		44
<b>REST DAYS PER WEEK</b>		
Median		2
IQR		0
<b>LOBORAL SENIORITY IN YEARS</b>		
Median		5.00
IQR		10

IQR: Interquartile range

To achieve the primary objective, the questionnaires were evaluated individually, with the sum of each of the items for the corresponding scale (emotional exhaustion, personal fulfillment and depersonalization), dichotomized as high and low score, the diagnostic criteria were applied in the

conjunction of scales for each questionnaire and a diagnosis was proposed, the frequency obtained was: Severe Burnout corresponds to 2.88% (n=4), moderate Burnout 5.76% (n=8), mild Burnout 16.55% (n=23), at Risk 29.5% (n=41) and Healthy cases predominated 45.32% (n=63). (Table 2).

**TABLE II.** Frequency of Burnout Syndrome in the Emergency Department of HGR No. 1. Mexico City.

	n	%
Healthy	63	45.32
Risk	41	29.50
Mild Burnout	23	16.55
Moderate Burnout	8	5.76
Severe Burnout	4	2.88
<b>Total</b>	<b>139</b>	<b>100</b>

Values represented by frequency distribution

In the evaluation of the MBI test by scales, there was a predominance of a higher score on the personal fulfillment

scale (mean score of 39.73), this scale constituting a protective factor for the development of burnout; followed by the

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emotional exhaustion scale with a mean of 25.44. The presence of a high score on the depersonalization scale is indicative of burnout.

### Inferential statistics

A normal distribution was obtained for each of the variables included (parametric).

To carry out the correlations between the socio-demographic variables: sex, age, gender, marital status, occupation and work shift, X<sup>2</sup> analysis was carried out.

In the analysis of hours worked, days off per week, age and work seniority, a Pearson correlation was performed; a moderate correlation was observed for all variables with each

of the scales (depersonalization, emotional exhaustion, personal fulfillment, MBI), with a higher correlation between hours worked per week and depersonalization ( $r = 0.2788$ ,  $p 0.001$ ), a negative correlation between age and depersonalization scale ( $r = -0.268$ ,  $p 0.002$ ), work seniority with depersonalization moderately negative correlation ( $r = -0.237$   $p 0.005$ ).

Age and days of rest per week have a low correlation with the personal fulfillment scale ( $r=0.166$   $p 0.05$ ;  $r= 0.164$   $p 0.05$ , respectively), constituting a protective factor for presenting Burnout; that is, the older the age, the higher the personal fulfillment, and the more days of rest per week, the higher the personal fulfillment. (Table 3)

**TABLE III.** Pearson correlation. Maslach Burnout Inventory (scales) with age, hours worked per week, rest days per week and work seniority in years.

		Age in years	Hours worked	Rest days	Work seniority
Depersonalization	Correlation	-0.262	0.278	-0.231	-0.237
	<i>p</i>	0.002*	0.001*	0.006*	0.005*
Emotional Fatigue	Correlation	-0.221	0.297	-0.197	-0.185
	<i>p</i>	0.009*	<0.001*	0.02*	0.02*
Personal Achievement	Correlation	0.166	-0.130	0.164	0.108
	<i>p</i>	0.05*	0.127	0.05*	0.206

\* Statistical significance for p-value

To associate the different scales of the MBI questionnaire (quantitative) with gender, occupation, marital status and work shift, a cross-table analysis was performed using chi-square. It was observed that gender and marital status were associated with personal accomplishment ( $X^2 44.56$   $p$

0.018;  $X^2 46.87$   $p 0.018$ , respectively), not constituting a predisposing factor for the development of burnout.

Occupation and work shift constituted a predisposing factor to burnout with a greater association in the depersonalization and emotional exhaustion scale ( $X^2 132.07$   $p 0.001$ ,  $X^2 116.28$   $p 0.011$ ). (Table 4).

**TABLE IV.** Chi-square. Maslach Burnout Inventory (scales) with gender, marital status, occupation and assigned work shift.

		Sex	Marital status	Occupation	Working shift
Depersonalization	$X^2$	23.47	26.10	132.07	116.28
	<i>p</i>	0.31	0.20	0.001*	0.01*
Emotional Fatigue	$X^2$	41.83	47.73	209.34	198.28
	<i>p</i>	0.056	0.324	0.04*	0.120
Personal Achievement	$X^2$	44.56	46.87	115.82	125.95
	<i>p</i>	0.01*	0.01*	0.28	0.11

\* Statistical significance for p-value

In the analysis of the diagnosis of burnout in its different stages: healthy, risk, mild, moderate and severe. It was obtained:

According to marital status married people are healthy with respect to single people ( $X^2 =7.29$ ,  $p 0.007$ ). In the occupation, nurses are healthier than the rest of the occupations included ( $X^2 =13.51$ ,  $p 0.009$ ), resident physicians have a greater presence of Burnout ( $X^2=10.39$ ,  $p 0.034$ ). Regarding the

work shift, the mixed work shift was the most affected by Burnout ( $X^2 = 19.1$ ,  $p 0.001$ ).

A simple linear regression model was performed, considering as response variable the score obtained in the Depersonalization scale of the MBI questionnaire, and as predictor variables the hours worked per week. Subsequently, a multiple linear regression model was constructed by forced

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entry; the response variable was the depersonalization scale score, and the predictor variables were: hours worked per week, rest days per week, work seniority per year, age, emotional exhaustion scale score, and personal fulfillment scale score.

From the analysis of the correlations, all with a value of less than 0.9, fulfilling the first step of collinearity and showing no bias in their association.

In the multiple linear regression model by forced entry we obtain an  $r = 0.713$ ,  $r^2 = 0.508$ ; in the first simple linear

regression model the  $r^2$  value was 0.077 in the multiple linear regression model  $r^2$  increases, representing 50.8% of the variance in the depersonalization score, in the adjusted  $r^2$  value the difference is a minimum of 2.2, this difference indicates that if the model were derived from the entire population instead of a sample, it would represent 2.2% less variance in the result. An F value of 23.125 is obtained, statistically significant ( $p < 0.001$ ) with a probability of less than 0.001 (Table 5).

**TABLE V.** Summary of the linear regression model. Depersonalization response variable + predictor variables

Model	R	R <sup>2</sup>	R <sup>2</sup> adjusted	Standard error of the estimate	R square change	Change in F	p Change in F
1	0.278 <sup>a</sup>	0.077	0.070	6.374	0.077	11.448	.001
2	0.713 <sup>b</sup>	0.508	0.486	4.741	0.431	23.125	.000

a. Predictors: (Constant), Hours worked per week

b. Predictors: (Constant), Hours worked per week, MBI Personal Accomplishment Scale, MBI Emotional Fatigue Scale, Age in years, Rest days off per week, Length of service in years

The result of the ANOVA test shows an  $F=43.46$  ( $p 0.000$ ).

The equation of the multiple linear regression model by forced entry is as follows:

$FF = 4.944$  (constant, Depersonalization) + 0.0 (Hours worked per week) - 0.393 ( Rest days per week) - 0.048 (Work seniority in years) - 0.031 (Age) + 0.327 (Emotional exhaustion scale score) - 0.075 ( Personal accomplishment scale score)

Consequently, hours worked does not influence depersonalization; while days of rest per week is inversely proportional to depersonalization with a variance of 3.93% of the outcome. Emotional fatigue represents 3.27 % of the outcome variable and is the only statistically significant variable ( $p < 0.001$ ). The regression model complies with the multicollinearity requirement, with an average VIF value of 1.272, not exceeding the value of 10, with a tolerance greater than 0.2; therefore, all the predictor variables included have an association with the outcome variable (depersonalization) without representing a bias or causality.

## IV. DISCUSSION

The term Burnout was borrowed from the aerospace industry, meaning depletion of rocket fuel as a result of excessive heating. The literal translation of this term is "to be burned out".<sup>[11-14]</sup>

A definitive concept of Burnout syndrome has not yet been determined, however, to speak of this syndrome we take as a reference what was conceptualized in 1989 by Maslach and Jackson who define it as "a syndrome of emotional exhaustion, depersonalization and low personal fulfillment, which may occur in individuals who work with people", whose

work environment represents excessive external and internal emotional demands, impossible to satisfy, which gradually produce the experience of personal failure, with the possibility of generating emotional, behavioral and / or psychosomatic repercussions.<sup>[11]</sup>

Despite being a growing disease, Burnout Syndrome is not recognized in the Diagnostic and Statistical Manual of Mental Disorders (DSM), although it is briefly mentioned in the International Classification of Diseases, but under the section associated with "problems related to the management of life difficulties".<sup>17</sup> In some countries patients with Burnout are diagnosed with Neurasthenia syndrome, provided that their symptoms are associated with work, considering it, therefore, as a form of mental illness.<sup>[5, 8, 15]</sup>

Authors such as Freudenberg 1974, Cherniss 1980, Maslach and Jackson 1986 and Turnipseed 1994 are the ones who set out the criteria and basis for Burnout. In their research they argue that the triggers of work stress are varied.<sup>[5, 7]</sup> However, in general, they agree on the following aspects for the appearance of Burnout, among which stand out working hours, disproportion of resources versus professional performance and translated as work overload; hostile environment with little or no work team cohesion; feeling of frustration at the perception of low professional and personal development; manifesting itself in those professionals whose work object is people. All this derives in three dimensions: exhaustion or emotional fatigue; depersonalization as the development of feelings, attitudes and negative, distant and cold responses towards other people, especially towards the beneficiaries of the work itself; finally, low personal fulfillment or achievement with a deep feeling of failure and development of low self-esteem.<sup>[2, 5, 7, 16-18]</sup>

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In this context, the detection and assessment of this syndrome is a priority, and there is a wide variety of instruments for its measurement. The most widely used is the Maslach Burnout Inventory (MBI) questionnaire, which is the most widely used in up to 90% of the research generated on this subject. It has been criticized for being considered confusing in its application.<sup>[19, 20]</sup>

So far, the scale has undergone three revisions, the latest of which finally introduced "non-care professions" and replaced the term depersonalization with "cynicism".<sup>[20]</sup>

The MBI has three official versions: the MBI Human Services Survey (HSS), for human services professionals (22 items), the MBI Educators Survey (ES), which simply substitutes the word students for patients, and the MBI General Survey (GS), a new version for use in any type of occupation (16 items).<sup>[11, 21]</sup>

In Mexico there are only two psychometric validity studies of the MBI HSS that indicate, at least partially, some efficacy of the scale in the Mexican population.<sup>[19, 22]</sup>

The WHO in its publication "The organization of work and stress (2004)" proposes a list of risk factors associated with occupational stress, grouped under different headings: Job characteristics; Work schedules; Participation and control; etcetera.<sup>[5]</sup>

In 2015, the World Health Organization, together with the Pan American Health Organization and the International Labor Organization, declared Mexico as the first place in cases of Burnout syndrome with 75% of the total working population, followed by China with 73% and in third place USA with 59%, in this context publications of the same organizations in 2015 and 2016, state that: "Job stress is able to reduce motivation, commitment and job performance; and produce an increase in absenteeism, staff turnover and early retirement. Which leads to decrease productivity, competitiveness and public image of organizations."<sup>[6-9, 23]</sup>

Koutsimani [et al.], point out that suffering from Burnout Syndrome, can be accompanied by certain degrees of depression, in their meta-analysis found that 59% of people who have been diagnosed with burnout were also diagnosed with an anxiety disorder and depression in up to 58%.<sup>[7, 24]</sup>

### **Sociodemographic characteristics of the population analyzed.**

Hernández G [et al.] in his article: "Burnout syndrome: an approach towards its conceptualization, background, explanatory and measurement models", points out that Burnout syndrome mainly affects women due to the diversity of professional and family-related tasks, which has an impact on their work performance. With respect to marital status, the greatest impact is observed in single people.<sup>[25]</sup>

Thomaé [et al.] in their review state that women are better able to cope with conflictive situations at work, so they are less prone to suffer Burnout in its different stages.<sup>[3]</sup> Aranda [et. al.] conclude in their study that men are more predisposed to Burnout.<sup>[26]</sup>

Regarding marital status and the association with Burnout, the results are still imprecise;<sup>[26-28]</sup> Hernández [et al] concludes in their study that single people are more predisposed to suffer from Burnout; this is perhaps associated with a lack of psychological support network.<sup>[25]</sup>

### **Incidence of Burnout in Nursing**

Trejo L [et al.], when studying nursing personnel working in a High Specialty Hospital, identified the association between Burnout Syndrome and depression, found that this association exists and that high scores of the syndrome are associated with severe depression.<sup>[3]</sup> Muñoz [et al.] describe that nurses who present Burnout Syndrome are located in the Emergency and Neonatology care units; the prevalence of Burnout Syndrome was 1.7%. The prevalence of Burnout syndrome was 1.7%. 15.8% presented a high level of Emotional Fatigue, 10.8% high Depersonalization and 9.2% a low level of Personal Accomplishment.<sup>[28]</sup>

Miranda-Lara [et al.] in their study "Prevalence of Burnout syndrome in nursing personnel in two health institutions", concluded that the proportion of personnel with Burnout syndrome was 33.8 %, in their evaluation by spheres it was found that 44.1 % presented emotional fatigue; 56.4 % depersonalization and 92.9 % low personal accomplishment.<sup>[10, 29]</sup>

Compared to this research, the nursing staff presented higher scores on the personal fulfillment scale, with low scores on the depersonalization scale, a greater number of healthy people and no correlation with the development of burnout; this is attributed to the constant service roles, with a permanence in the emergency department of no more than one year.

### **Incidence of Burnout in Emergency Physicians**

Emergency departments are exciting and challenging work environments, but they can be full of stressors and expose emergency physicians to high levels of burnout.<sup>[30]</sup>

Rocha in his review "Síndrome de Burnout ¿el médico de urgencias incansable?" refers to the presence of burnout in emergency physicians due to the work overload and the conditions demanded by the specialty.<sup>[31]</sup> Aranda-Beltrán includes family physicians in her study and concludes that: the prevalence of Burnout was 41.8% with significant associations with sociodemographic and work variables that behaved as a risk factor, with the dimension of "emotional exhaustion" being the most affected.<sup>[27]</sup>

Truchot [et. al.] in their study included a sample of 435 emergency department physicians and concluded that almost a quarter of this sample presented high levels of emotional exhaustion, 10% high depersonalization and 8% both (corresponding to severe Burnout).<sup>[30]</sup>

Rotenstein [et al.] in their systematic review of 182 studies involving 109 628 physicians in 45 countries, demonstrated remarkable variability in published prevalence estimates of burnout, with estimates of overall burnout ranging from 0% to 80.5%.<sup>[16]</sup>

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Physicians specializing in emergency medicine have presented a higher incidence of burnout, with different stages of burnout, and the literature agrees that work overload derived from caring for a greater number of patients, administrative overload and limited recreational time are predisposing factors to the development of burnout syndrome. [32, 33, 34]

### Incidence of Burnout in Emergency Medicine Residents

Balcazar L [et al.] in their study included resident physicians from nine different specialties, who presented high levels of professional burnout and emotional exhaustion with a high incidence of Burnout in its different stages, 72 residents from different specialties were included, they concluded that 100% of the resident physicians presented some degree of professional burnout. High levels of emotional exhaustion and depersonalization were found; the type of specialty did not influence the presence of the syndrome. [35]

Velasquez-Perez [et al.] in his study included 43 residents of different specialties, evaluated the presence of burnout and depression at different times, to assess changes in health status, follow-up was performed at admission, 6 and 12 months later. It states that, at admission, 97.7% of the physicians were free of depression; at the 12-month evaluation, mild depressive symptomatology increased ( $P=0.02$ ). With respect to Burnout Syndrome, there was a significant increase in emotional exhaustion at 6 and 12 months. [4]

Studies related to the presence of burnout in resident physicians report high incidences, despite the fact that the methodology in the evaluation of the syndrome mostly coincides with depersonalization and emotional exhaustion as the predominant scales, regardless of the educational program or medical specialty. Resident physicians in emergency medicine have presented a higher incidence of suicides, derived from stress somatized in depression. [36, 37, 38, 39]

In the present investigation, of the total number of resident physicians included, 24.4% were healthy; however, the presence of Burnout syndrome with a stratification from risk to severe was 75.6%.

### Correlation of Burnout Syndrome incidence with seniority and working hours.

There is a direct relationship between burnout syndrome and the work environment, with the influence of various psychosocial variables (work overload, cohesion among colleagues, organizational structure, communication and work pressure). [36]

Gil [et al] describes different theories as triggering factors for the presence of burnout, including organizational theories, in which the excessive number of working hours per week and length of service are proposed. [29]

Carrillo R [et al.] in his review "Burnout syndrome in medical practice" comments that the presence of the syndrome is related to the dimension of emotional exhaustion, identifying as main factors the number of shifts per month, the number of working hours per week. [1]

In a multivariate analysis, they propose that a workload of more than 48 hours per week is associated with an increased risk of emotional exhaustion with a 95% CI. [30] There is a direct association of burnout syndrome with the mixed work shift and number of hours worked per week, with a higher score on the depersonalization scale and a greater predisposition to present the disease. [27]

A seniority at work is a predisposing factor to the syndrome; however, it is not clear how many years of work are more associated with the development of burnout. [26, 30, 39]

## V. CONCLUSIONS

There is a statistically significant correlation between the greater number of hours worked per week, fewer days off, less seniority, mixed work shifts and occupation with the presence of burnout, being considered predisposing factors for the development of the syndrome.

Marital status (married), greater number of days off per week and greater length of service were associated with higher scores on the self-fulfillment scale, constituting protective factors for burnout.

The multiple linear regression model is valid, so that the variables included have a direct association with the presence of the disease.

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### APPENDIX 1. THE MASLACH BURNOUT INVENTORY

How do you perceive your work? Are you exhausted? How capable are you of shaping your relationship to others? To what degree are you personally fulfilled?

Indicate how frequently the following statements apply to you and add the points indicated on top of the respective box:

0 = Never

1 = At least a few times a year

2 = At least once a month

3 = Several times a month

4 = Once a week

5 = Several times a week

6 = Every day

	Never ↓			Every day ↓					
	0	1	2	3	4	5	6		
01 - I feel emotionally exhausted because of my work									
02 - I feel worn out at the end of a working day									
03 - I feel tired as soon as I get up in the morning and see a new working day stretched out in front of me									
04 - I can easily understand the actions of my colleagues/supervisors									
05 - I get the feeling that I treat some clients/colleagues impersonally, as if they were objects									
06 - Working with people the whole day is stressful for me									
07 - I deal with other people's problems successfully									
08 - I feel burned out because of my work									
09 - I feel that I influence other people positively through my work									
10 - I have become more callous to people since I have started doing this job									
11 - I'm afraid that my work makes me emotionally harder									
12 - I feel full of energy									
13 - I feel frustrated by my work									
14 - I get the feeling that I work too hard									
15 - I'm not really interested in what is going on with many of my colleagues									
16 - Being in direct contact with people at work is too stressful									
17 - I find it easy to build a relaxed atmosphere in my working environment									
18 - I feel stimulated when I been working closely with my colleagues									
19 - I have achieved many rewarding objectives in my work									
20 - I feel as if I'm at my wits' end									
21 - In my work I am very relaxed when dealing with emotional problems									
22 - I have the feeling that my colleagues blame me for some of their problems									

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