Journal of Acute Medicine 9(1): 8-15, 2019
DOI:10.6705/j.jacme.201903_9(1).0002
Original Article

Stress Factors Associated With Burnout Syndrome in a Hospital Emergency Service: An Observational Study

Martin Diana Menéndez*, Marcelo Papasidero

Emergency Service, Austral University Hospital, Buenos Aires, Argentina

Objective: To assess burnout prevalence in physicians at a University Hospital Emergency Service Unit.
Method: An observational, cross-sectional descriptive study was conducted at the Emergency Service Unit in a University Hospital. To assess levels of burnout, the Maslach Burnout Inventory (MBI) was used. The MBI assesses levels of emotional exhaustion, depersonalization, and personal achievement.
Results: Thirty-six physicians from the Emergency Service Unit were included in the study. The gender distribution was 50% in each group. The median age was 36 years old with a range of 27 to 52 years old. Sixty-one percent worked more than 44 hours per week. Sixty-one percent of the physicians showed a high burnout index and 14% of the physicians had a high score in all three of the scales in the MBI. Furthermore, in this study, 41% of the participants showed high emotional exhaustion, 50% exhibited high depersonalization, and 22% low personal achievement. Regression analysis demonstrated that age (≥ 35 years) was a significant (p = 0.058) predictor of burnout syndrome and total working hours (≥ 44 weekly) was also associated with the syndrome at a p value of 0.042.
Conclusions: A high burnout prevalence was observed in our population, similar to the one shown in the literature, especially due to depersonalization. Age could represent a stress factor when compared to other occupations where more on the job experience may be beneficial in reducing stress. In addition, a high workload increased stress and tended to lead to burnout.

Key words: *burnout, emergency service, stress factors, workload*

Introduction

Burnout syndrome has become increasingly significant since professional exhaustion levels have increased among health care workers and this remains a difficult challenge to solve. Emergency Service Units in Hospitals are stressful environments and physicians are exposed to critical situations which need to be resolved rapidly, making burnout syndrome an important problem. Until now no investigations have been made on this specific population, which has some inherent peculiarities in their daily work, such as taking quick decisions or dealing with violent situations, just to name a few examples. Knowing the prevalence of Burnout in Emergencies is the starting point for the approach of this problem.

Burnout syndrome was first described by Freudenberger in 1974,[1] and was defined as work-related stress in the Spanish literature and recently referred to as "job burnout." Today, burnout syndrome is known as a "modern pathology" according to Gil-Monte[2] which results from the chronic work stress to which a worker is exposed. Gradual and continuous (at least six months) exposure to the existing stressors within the work environment, which is common among professionals who have direct contact with patients or clients, may lead to burnout syndrome.[3]

Received: July 2, 2018; Revised: July 17, 2018; Accepted: July 27, 2018.
*Corresponding author: Martin Diana Menéndez, Emergency Service, Austral University Hospital, Ave. Juan Domingo Perón 1500, Pilar B1629ODT, Buenos Aires, Argentina. E-mail: madiana@cas.austral.edu.ar

Although there are many definitions, the most well-known is the one from Maslach and Jackson,[4] who developed the Maslach Burnout Inventory (MBI) in 1981. This work helped to describe and quantify this problem and formally present it in the literature.

Maslach[5] defined burnout syndrome as: "a psychological syndrome of emotional exhaustion (EE), depersonalization (D) and reduced personal achievement (PA) which can occur among individuals who work with other people in some capacity." EE refers to feelings of being emotionally overextended and depleted of one's emotional resources.

D refers to a negative, callous, or excessively detached responses to other people, who are usually the recipients of one's service or care. Reduced personal accomplishment refers to a decline in one's feelings of competence and successful achievement in one's work."[5]

This study is an attempt to understand and quantify the Burnout prevalence in physicians of the Emergency Service Unit of Austral University Hospital (AUH) and compare it with the literature.

Primary Objective

The primary objective was to assess the Burnout prevalence in Emergency Service Unit physicians at AUH.

Methods

Design

An observational, cross-sectional descriptive study was conducted.

Location

The study was conducted in an adult Emergency Service Unit at the AUH, located in the Province of Buenos Aires, Argentina, during the months of June–August, 2015. AUH is a level 1 hospital with approximately 7,500 monthly medical consultations in the Emergency Services Unit.

Participants

Physicians who work in the adult Emergency Service Unit on any schedule, day shift, or night shift were included in the survey.

Methodology

The study was conducted using the MBI assessment test (Supplement 1), it is a widely recognized and used instrument, and its applicability is undeniable especially for people who work with people. For each of the three scales, we used the classification scores recommended by González et al.[6] which assign a score as the following. (1) EE: a score of 27 or higher would indicate a high level of burnout, a score between 19 and 26 indicates an intermediate level and scores lower than a 19 would indicate low or very low level of burnout. (2) D: a score greater than 10 indicates a high level of burnout, six to nine a medium level and lower than six indicates a low degree of burnout. (3) PA: a score from zero to 30 would indicate a low PA (high level of burnout), scores from 34 to 39 indicate medium level burnout and higher than 40 corresponds to an excellent sense of achievement (low level of burnout).

Evaluated Variables

Age, gender, marital status, number of children, working hours, duration of service (years), type of employment contract with the hospital, working hours per week, and other jobs outside of the hospital were evaluated.

Format of Study

The published MBI assessment test questionnaire was used along with demographic and personal data (Supplement 1). The completed questionnaire was personally delivered to the authors by each participating physician. A system of codes with letters and numbers were included in the survey to identify the participants. All adult physicians of the emergency service (n = 36) were invited to participate, and they signed in their entirety the informed consent. There was no refusal to carry out this investigation.

Statistical Analysis

The statistical program Stata 8.0 (StataCorp LLC., College Station, TX, USA) was used to evaluate the data collected. Quantitative variables were analyzed using the median and quartiles when the distribution was non-parametric, and analyzed as means with their standard deviations when they fulfilled the normality assumption. The categorical variables were expressed in percentages and absolute values. The continuous variables were compared using a t test (according to the parametric distribution) or Wilcoxon signed-rank test, whereas the categorical variables were analyzed with

the chi-square test or the Fisher's exact test. A p value of < 0.05 was considered statistically significant.

Results

Thirty-six participants were included in the study, demographic and labor characteristics are shown in Table 1.

Participants were categorized according to the González et al.[6] ranking system. Sixty-one percent of the physicians showed at least one criterion indicative of high burnout, 14% were affected by three criteria (Fig. 1). They were distributed as follows: one criteria (eight) 22%, two criteria (nine) 25%, and three criteria (five) 14%.

When assessing each item indicating some level of burnout we found the following: 15 physicians (41%) exhibited high EE, 18 physicians (50%) showed a high D, and eight physicians (22%) had a feeling of low PA. To perform a predictive burnout pattern (Table 2), we started with a univariate analysis, in which all variables with burnout outcome were compared. Those which resulted in a p value ≤ 0.1 were then included in a multivariate analysis; variables were sequentially added to the model. Confounding and additive effects were described and a final predictive model was proposed.

In Table 2, our univariate analysis indicates non-significant effects for physicians ≥ 35 years of age. However, regression analysis resulted in p =

Table 1. Characteristic of the population studied

Variables	Number	%
Gender		
Females	18	50
Males	18	50
Age		
< 35 years	15	42
≥ 35 years	21	58
Total working hours		
< 44 weekly	14	39
≥ 44 weekly	22	61
Hours at AUH		
< 24 weekly	6	16
≥ 24 weekly	30	84
Years of working at AUH		
< 1 year	9	25
≥ 1 years	27	75

AUH: Austral University Hospital.

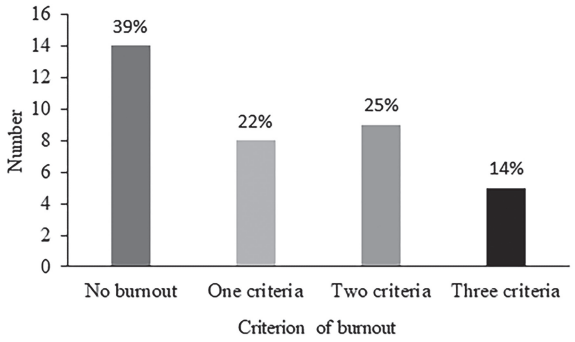

Fig. 1. Number of individuals exhibiting 0–3 criteria.

Table 2. Statistical analysis showing odds ratio and confidence interval

	OR (CI 95%)	p
Univariate analysis		
Males	0.89 (0.55–2.23)	NS
Age ≥ 35 years	1.15 (0.89–3.43)	0.051
Years of working time > 1 years	1.34 (0.77–1.20)	0.087
Hours at AUH > 24 weekly	1.45 (1.32–1.67)	0.041
Total hours > 44 weekly	1.87 (1.45–2.19)	0.029
Multivariate analysis		
Age ≥ 35 years	1.07 (0.82–2.54)	0.058
Years of working time > 1 years	1.14 (0.57–3.05)	NS
Hours at the AUH > 24 weekly	1.24 (0.87–5.02)	NS
Total hours > 44 weekly	2.04 (1.21–4.11)	0.042

AUH: Austral University Hospital; CI: confidence interval; NS: non-significant; OR: odds ratio.

0.058, which indicates age might be a predictive factor of the syndrome. In addition, higher workloads of ≥ 44 h resulted in a statistically significant effect associated with burnout syndrome (p = 0.042). Finally, although workloads higher than 24 h per week appeared to be associated with the syndrome in the predictive model, regression analysis was not statistically significant (odds ratio [OR] = 1.24; 95% confidence interval [CI] = 0.87–5.02); results were similar for the category of physicians with several years on the job.

Discussion

This assessment allowed us to get an estimate of how our physician team at the Emergency Service Unit performed, and enabled us to compare that performance with what is reported in the literature. In a study conducted in Spain,[7] 42% of the physicians showed EE, 23% D and 28% lack of PA. Our population showed a similar level of EE (42%), a lower percentage (22%) in the PA category, however we had double the D factor (50%) (Table 3). The results from the Spanish group mentioned above were taken from health practitioners in different specialties and a different scoring assessment was used. In our study, only the Emergency Service Unit physicians were surveyed.

Another study by Grau et al.[8] of hospitals in Spain and Latin America observed a burnout syndrome prevalence of 14.4% in Argentina, similar to our study, although it was conducted in different medical specialties and also used a different scoring assessment.

Although the Grau et al.'s[8] study utilized different methodology and different scoring classification for determining burnout, we nevertheless found it to be a useful comparison. The mean numerical scores in our population were: EE = 22.6, D = 8.0, and PA = 38.2 (Table 4).

In the Grau et al.'s study,[8] considering only the Argentine population, the median values were: EE = 27.0, D = 8.3, and PA = 36.6. One limitation of the study was the participation bias; completion of the survey was entirely voluntary. In another study by Marucco[9] looking at burnout syndrome prevalence in physicians in a Hospital in the south of Buenos Aires, they found mean values of EE = 26.8, D = 11.2, and PA = 31.2.

We also looked at other studies which used the same scoring classification. For instance, a study of physicians in the pediatric intensive care unit (ICU) in Argentina,[10] where the same scoring classification was used showed the following: median EE = 20.0, D = 5.7, and PA = 30.0 (Table 4). The study showed that 25% of the physicians surveyed exhibited EE, 19% D and 6% had a feeling of low PA (Table 5).[10] Forty-one percent of all participants showed a high score in one of the three scales.

Another study using a similar scoring classification was conducted in various ICUs[11] in several private hospitals in Argentina. In this study 14.5% of the physicians had high number in the three scales. When observed by items, they reported the following: EE = 50%, D = 66% and low PA = 27%.

The literature shows a wide distribution of results within a very heterogeneous group, which makes the comparison with other studies difficult because various scoring classifications were used.[12]

In conclusion, emergency service physician at AUH showed a high burnout prevalence, similar to what is reported in the literature, particularly due to

Table 3. Comparison of Austral hospital and a Spanish study

Scale	Austral hospital	Grau et al.[7]
High emotional exhaustion (%)	42	42
High depersonalization (%)	50	23
Low personal achievement (%)	22	28

Table 4. Comparison of four different studies

Scale	Austral hospital	Grau et al.[8]	Marucco[9]	Galván et al.[10]
Emotional exhaustion	22.6	27.0	26.8	20.0
Depersonalization	8.0	8.3	11.2	5.7
Personal achievement	38.2	36.6	31.2	30.0

Table 5. Comparison of three studies of burnout using the same scoring classification

Scale	Austral hospital	Galván et al.[10]	Zazzetti et al.[11]
High emotional exhaustion (%)	42	25	50
High depersonalization (%)	50	19	66
Low personal achievement (%)	22	6	27

the effect of D. We believe the greater D observed could be associated with our sample, because we evaluate only emergency physicians. We know working in this sector, being exposed to adverse situations or stress, can generate psychological mechanisms of adaptation that lead to loss of empathy or D.

It appears that the age factor (older physicians) could be responsible for causing stress in our study. This point might be the most controversial, but we think age plays an important role, especially due to the physical exhaustion caused by the lack of sleep during night shifts and the chronic lack of recovery. We do believe this difference is related to the type of population we analyzed in the investigation: all emergency physicians.

It is pending for a new research work to continue investigating the relationship between the burnout syndrome with each subgroup of ages in emergencies.

We also believe that the weekly high work load is an additional variable which contributes to burnout syndrome. This aspect needs to be further investigated and requires more attention since most physicians devote more than 40 h a week to their professional practice. A limitation of this study was that specific variables such as the number of night shifts worked for each physician were not considered nor the fact that some physicians work in sections of the Unit that have inherently more stress (severe trauma) vs. other sections that have relatively less stress (minor injuries). As this study was only carried out in our organization, there may be some institutional factor that has acted as a bias.

Conflicts of Interest Statement

We do not have any conflict of interest, neither financial support for conducting this study.

Acknowledgments

Out special thanks to Dr. Leandro Seoane for his support and contribution to the study, and Dr. Silvio Torres who kindly provided us with the technical knowledge.

References

1. Freudenberger HJ. Staff burn-out. *J Soc Issues* 1974;30:159-165. doi:10.1111/j.1540-4560.1974.tb00706.x
2. Gil-Monte PR. Aproximaciones psicosociales y estudios diagnósticos sobre el síndrome de quemarse por el trabajo (burnout). *Monogr Rev Psychol Trab Organ* 2000;16:101-102. [In Spanish]
3. Capilla Pueyo R. El sindrome de burnout o de desgaste profesional. *JANO: Med Hum* 2000;58:1334. [In Spanish]
4. Maslach C, Jackson SE. The measurement of experienced burnout. *J Organ Behav* 1981;2:99-113. doi:10.1002/job.4030020205
5. Maslach C. Burnout: a multidimensional perspective. In: Schaufeli WB, Maslach C, Marek T, eds. *Professional Burnout: Recent Developments in Theory and Research*. Washington, DC: Taylor & Francis; 1993:19-32. *Series in Applied Psychology*.
6. González R, de la Gándara Martín JJ, González Rodríguez VM. *El Medico con Burnout: Conceptos Básicos y Habilidades Prácticas para el Médico de Familia*. Madrid, Spain: IM & C; 2004:16-19.
7. Grau A, Suñer R, García MM. Desgaste profesional en el personal sanitario y su relación con los factores personales y ambientales [Burnout syndrome in health workers and relationship with personal and environmental factors]. *Gac Sanit* 2005;19:463-470. [In Spanish] doi:10.1016/S0213-9111(05)71397-2
8. Grau A, Flichtentrei D, Suñer R, Prats M, Braga F. Influencia de factores personales, profesionales y transnacionales en el síndrome de burnout en personal sanitario hispanoamericano y español (2007) [Influence of personal, professional and cross-national factors in burnout syndrome in Hispanic Americans and Spanish Health Workers (2007)]. *Rev Esp Salud Publica* 2009;83:215-230. [In Spanish] doi:10.1590/S1135-57272009000200006
9. Marucco MA. Prevalencia del síndrome de burnout y estrategias preventivas en profesionales de la salud un hospital general del conurbano bonaerense. Available at: https://zh.scribd.com/document/352605609/Prevalen-

cia-Del-Sindrome-de-Burnout-y-Estrategias-Preventivas-en-Profesionales-de-La-Salud-de-Un-Htal-General-Del-Conurbano-Bonaerense. Accessed May, 2008.

10. Galván ME, Vassallo JC, Rodríguez SP, et al.; Miembros del Grupo de Investigación Clínica y Epidemiológica en Terapia Intensiva Pediátrica—Sociedad Argentina de Pediatría. Síndrome de desgaste profesional (burnout) en médicos de unidades de cuidados intensivos pediátricos en la Argentina. *Arch Argent Pediatr* 2012;110:466-473. [In Spanish]
11. Zazzetti F, Carricaburu MV, Ceballos JL, Miloc E. Prevalencia de síndrome de burnout en médicos y enfermeros de unidades de terapia intensiva privadas en argentina. *Rev Argent Clin Neuropsiquiatr* 2011;17:120-128. [In Spanish]
12. Gil-Monte PR, Peiró JM. Un estudio comparativo sobre criterios normativos y diferenciales para el diagnóstico del síndrome de quemarse por el trabajo (burnout) según el MBI-HSS en España [A comparative study about normative values and cut-off points to diagnose the burnout syndrome in Spain according to MBI-HSS]. *Rev Psicol Trab Organ* 2000;16:135-149. [In Spanish]

Supplement 1. Burnout survey

Date: **Age:** **Gender:** **Marital Status:** **Number of Children:**
Position: **Hours for Position:** **Number of Years Worked at the Hospital:** **Other Work?**
Total Hours per Week at Austral? **Type of Employment:** Permanent Employee or Contract Employee

				Never	One or less times per year	One or less times per month	Several times per month	One time per week	Several times per week	Dailey
				0	1	2	3	4	5	6
1		EE	I feel emotionally drained from my work.							
2		EE	I feel used up at the end of the workday.							
3		EE	I feel fatigued when I get up in the morning and have to face another day on the job.							
4		PA	I easily understand how clients/ patients feel.							
5		D	I feel I treat some patients as if they were impersonal objects.							
6		EE	Working with people all day is really a strain for me.							
7		PA	I deal very effectively with the problems of my patients.							
8		EE	I feel burned out from my work.							
9		PA	I feel I'm positively influencing other people's lives through my work.							
10		D	I've become more callous towards people since I took this job.							
11		D	I worry that this job is hardening me emotionally.							
12		PA	I feel very energetic.							
13		EE	I feel frustrated by my job.							
14		EE	I feel I am working too hard on my job.							
15		D	I don't really care what happens to some patients.							
16		EE	Working directly with people puts too much stress on me.							
17		PA	I can easily create a relaxed atmosphere with my patients.							
18		PA	I feel exhilarated after working closely with my patients.							

				Never	One or less times per year	One or less times per month	Several times per month	One time per week	Several times per week	Dailey
				0	1	2	3	4	5	6
19		PA	I have accomplished many worthwhile things in this job.							
20		EE	I feel like I am at the end of my rope.							
21		PA	In my work, I deal with emotional problems very calmly.							
22		D	I feel patients blame me for their problems.							

D: depersonalization; EE: emotional exhaustion; PA: personal achievement.