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Factors associated with occupational burnout of hospital administrative staff during COVID-19 pandemic: A cross-sectional study

Paraskevi Roumelioti [1,3], Maria Katharaki [2,3]

ABSTRACT

Introduction

Administrative staff of Hospitals has been exposed to stressors that exacerbated negative emotions and exhaustion during the SARS-CoV-2 period. The study investigates the level of burnout of the administrative staff of General Hospital of Elefsina "Thriassion", a COVID-19 reference Hospital in Attica-Greece, and the effect of socio-demographic characteristics on the burnout variable.

Methods

A cross-sectional survey was conducted from April to July 2021. Data was collected through an online self-administered questionnaire. Out of 105 eligible administrative officers, 95 employees enrolled in the study. The research instrument was the Maslach Burnout Inventory (MBI). Cronbach's alpha was above 0.80. T-test, ANOVA and Mann Whitney U and Kruskal Wallis tests were applied. Multinomial logistic regression was used to analyse relationships between categorical variables of MBIand independent variables of demographic and employment. The statistical significance threshold was set at 0.05.

Results

69 women (72.6%) and 26 men (27.4%) participated in this study. The majority aged 35-55 years (67.4%), Higher Education graduates (30.5%) and with 15-25 years of service (56.8%). Higher levels of emotional exhaustion are observed with moderate level of depersonalization and personal achievement. Statistically significant difference between gender and burnout has been found, with women exhibiting higher levels of emotional exhaustion (p=0.001). The educational level is statistically significant to the level of depersonalization (p=0.010), Age (p=0.038), education (p=0.029)and years of service (p=0,000) affect staff's experience of burnout.

Conclusions

Socio-demographic and occupational factors affect the burnout that administrative staff has been experiencing during the pandemic. Implementing psychological support activities, upskilling, development and empowerment of administrative staff will contribute positively to the benefit of employees and the quality of services provided.

Keywords: Occupational Burnout, administrative staff, Hospital environment, COVID-19

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1*Corresponding author [1,3]Paraskevi Roumelioti General Hospital of Elefsina "Thriassion", Attica, Greece. [2,3] Maria Katharaki, Operational Researcher, RN, MSc, MBA, PhD Collaborating Academic Staff,Frederick University, Nicosia, Cyprus - Address: 7, Y. Frederickou, Pallouriotissa, Nicosia 1036, Cyprus

Email: hsc.km@frederick.ac.cy

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INTRODUCTION

Since the beginning of 2020, the world community has been trying to tackle a new coronary artery disease called SARS COV-2, which causes COVID-19[1],[2],[3]. On March 11, 2020, WHO declared the outbreak of the disease a pandemic[1]. Health systems throughout the world have been under considerable pressure [2],[3],[4]because of the large number of hospitalizations due to the high transmissibility of the virus and the serious effects on the human body and the need to support many of them in ICU beds, which means the need for respirators, personal protective equipment and specialized staff[3],[4].

Managing healthcare staff and their needs, managing hospital beds and their separation into COVID-19 and non-COVID-19 beds, designating Hospitals as to receive COVID-19 patients, adopting triage procedures in particularly difficult conditions are some of the challenges of the pandemic period. What is necessary is the flexibility, responsiveness and resilience of both the health system and healthcare staff to successfully manage the effects of the pandemic.

Healthcare workers in hospitals experience high levels of stress, fear and exhaustion [5]-[11]. They deal with the concerns of the COVID-19 patients, of their family members, their colleagues, they experience fear of the unknown disease and challenges related to personal infections, professional control skills. They also deal with the concerns of patients without COVID-19 due to the cancellation or postponement of scheduled surgeries or other medical examinations. Hospital administrative staff has been also exposed to stressors that exacerbated negative emotions and exhaustion during the SARS-CoV-2 period [7]. This staff is employed in services for the efficient operation of the Hospital, as well as in the reception of patients and the management of issues related to their hospitalization period.The burden on health professionals during the pandemic is a matter of particular interest to the scientific community [2],[5]-[11], as the health crisis, with all the uncertainty and the restrictive measures, the lack of social interaction, the deaths without mourning and the financial instability fuel a parallel "invisible" pandemic of poor mental health of both health professionals and the general population.According to Maslach, Jackson and Leiter [12], burnout is a psychological syndrome characterized by emotional exhaustion, depersonalization and reduced personal accomplishment. While burnout syndrome has been extensively studied among various professional groups [13], to our knowledge,there is extremely limited research evaluating the prevalence of professional burnout in hospital administrative staff.Understanding the factors that affect the burnout experienced by administrative healthcare staff during the pandemic period will highlight the measures that should be taken to protect their mental and physical health and well-being.

The purpose of the research is to assess the burnout level of the administrative staff of General Hospital of Elefsina "Thriassion", a COVID-19 reference Hospital in Attica Greece, as well as to investigate the effect of socio-demographic characteristics on the burnout variable. The research hypotheses are: a) the burnout of the administrative staff is expected to be of high level in the dimensions of emotional exhaustion and depersonalization and low level in the dimension of personal achievements and b) the socio-demographic characteristics such as gender, age, education, work status and years of service are expected to be related to the burnout experienced by the administrative staff.

The results of the research are expected to give information on the needs of administrative staff during the pandemic period on which the design and development of protection and support programs can be based.

METHODS AND MATERIALS

Questionnaire and data collection

This cross-sectional survey took place from the end of April to 30 July 2021.The third serious wave of the pandemic was in progress at that time in Greece, while the National vaccination program against COVID-19 was being developed.The sample consisted of administrative staff of the General Hospital of Elefsina "Thriassion", which operated as a COVID-19 reference Hospital in Attica-Greece. The Organization chart of the Hospital was used to reach the administrative staff. The entire administrative staff of the Hospital is 117 persons. The criterion for participating in the survey was at least one year of full-time employment in an administrative position, i.e. employment during the pandemic. 12 employees that were on long-term sick leave or had less than one year employment in the Hospital were excluded from the study. The online self-administered questionnaire was sent to the administrative staff via service emails to avoid personal contact in the context of social distancing due to the COVID-19 pandemic. Out of 105 eligible administrative officers, 95 employees filled and submitted the questionnaire, i.e. a participation rate of 90.5%. The Maslach Burnout Inventory (MBI) questionnaire [12] was used to measure burnout. The questionnaire has been adjusted in Greek language by Papadatou et al. [14].

This psychometric tool consists of questions which reliably reflect the feelings of healthcare workers [14]. The internal consistency of the MBI scale dimensions has been estimated using Cronbach's alpha from 0.71-0.90 [12, 14].

In its final form, the distributed questionnaire consists of two sections. One section includes questions about gender, age, educational background, employment, relationship, years of service, job position, as well as questions about them or their colleagues having contracted corona virus, being in quarantine and changes in working conditions. The second section includes the 22 MBI questions, categorized into three dimensions: emotional exhaustion (9 questions), personal achievement (8 questions), and depersonalization (5 questions). For each question, participants were asked to indicate their degree of agreement on a 7-point Likert scale in ascending order from 0=never to 6=every day. The answers to the questions form the score on the scale of the MBI tool (Table 1). High values in the dimensions of emotional exhaustion and depersonalization and low values in the dimension of personal achievements correspond to high levels of burnout.

Table 1. MBI subscale scores

Scale	Score		
	Low	Moderate	High
Emotional Exhaustion	0 to 16	17 to 26	27 to 54
Personal Achievements	39 to 48	32 to 38	0 to 31
Depersonalization	0 to 6	7 to 12	13 to 30

Even though the MBI instrument has already been validated [12],[13],[14],the face and the content validity was checked through its application to 10 academic and statistics experts by using Lawshe scale [15]; all questions had Content validity ratio (CVR)>0.62(Lawshe minimum acceptable CVR for this number of experts).Experts comments concerned the clarity and comprehension of the content of the questionnaire, and grammar or syntax errors.The questionnaire should have taken about 7 minutes to complete.

To conduct the research study, a permit was obtained from the Board of Directors of the Hospital and the Regional Health Authority and the questionnaire was reviewed and approved by the Scientific and Ethics Committee of the Hospital (approval number: 8208/16-04-2021). No special permits have been required for the MBI research tool as it is free to use for academic purposes. In addition, in the context of bioethics and ethical principles for research and the EU General Data Regulation 2016/679, participants have been informed of the purpose of the research through a cover letter they received along with the questionnaire, which stated that participation in research was anonymous, informed, voluntary and volitional and the privacy and confidentiality of personal data was guaranteed.

Data Analysis

Descriptive and inferential statistics were used for data analysis. A normality test and an internal consistency test (Cronbach's alpha) were performed. The independent samples t-test and the one-way ANOVA analysis has been used to compare mean values of emotional exhaustion and variables such as gender, age, educational level. Non-parametric Mann Whitney U and Kruskal Wallis tests have been used in the case of variables that follow a non-normal distribution. Multinomial logistic regression has been applied with a dependent variable each time, the three-dimensional form (low, moderate and high score) of the "emotional exhaustion" vari-able, the "personal achievements" variableand the "depersonalization" variable and the same explanatory variables (gender, age, education, employment, years of service and job). The statistical package IBM SPSS Statistics 25.0 has been used. The two-sided level of statistical significance was set equal to 0.05.

RESULTS

Socio-demographic characteristics of the sample

The sample consisted of 95 administrators, 69 women (72.6%) and 26 (27.4%) men. The subjects's age ranged between 18 years to 65 years old, with the majority aged between 35-55 years (67.4%) (Figure 1). The educational level of the administrative staff covers all educational levels with 30.5% being graduates of Higher Education and 41.05% graduates of Secondary education. 15.8% of the sample has only completed compulsory education and 12.6% has a Master's degree. 80% of employees have a permanent position, 14.75% are employed under fixed-term employment contracts governed by private law and 5.26% are employed under private law contracts of indefinite duration. 56.1% of the employees have 15-25 years of service and 20% of the participants have 25 to 30 years.

Figure 1 Age range of the sample

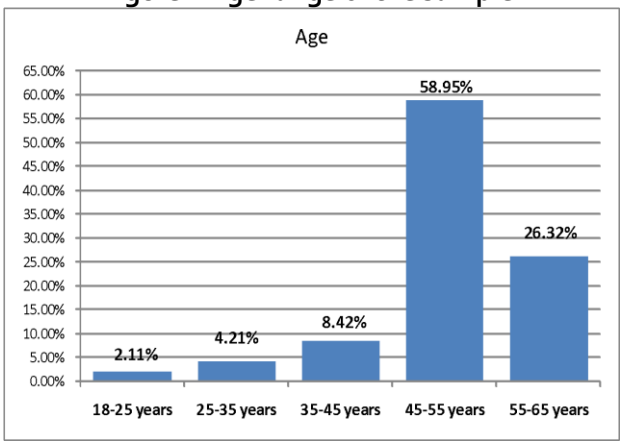
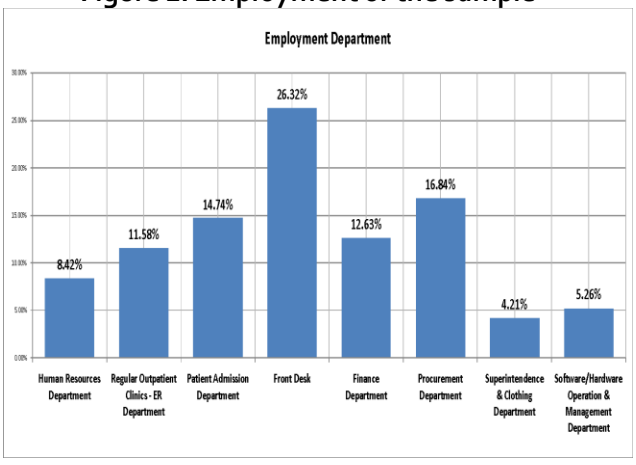


Figure 2 presents the distribution of the participants by their job. 26.3% of the sample is employed in the front desk, 16.8% in the Procurement Department and 14.7% in the Patient Admission office.

Figure 2. Employment of the sample



6.3% of the sample contracted the corona virus, while 73.4% responded positively to the fact that their colleagues at work contracted the corona virus, 22.3% responded negatively and 4.3% that they were not sure.Only 18.9% were placed in quarantine due to contact with a suspected case, of which 88.9% quarantined once and 11.1% twice.Regarding the working conditions during the pandemic, 72.6% of the sample answered that they had to be more careful in order not to get sick, 62.1% stated that the obligations increased, 28.4% that the working hours increased and 23.2% that they did not take frequent breaks.

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Reliability of the scale and normality test

The reliability test has been performed using the values above 0.80 in all three subscales of the questionnaire (Table 2), stating the very good reliability Cronbach's alpha coefficient, which received The Kolmogorov-Smirnov (K-S) test has been used to assess normality. The variable of emotional exhaustion followed the normal distribution (K-S(95)=0.059, p=0.200). The variable of personal achievements (K-S(95)=0.101, p=0.017) and the variable of depersonalization (K-S(95)=0.153, p=0.001) did not follow the normal distribution.

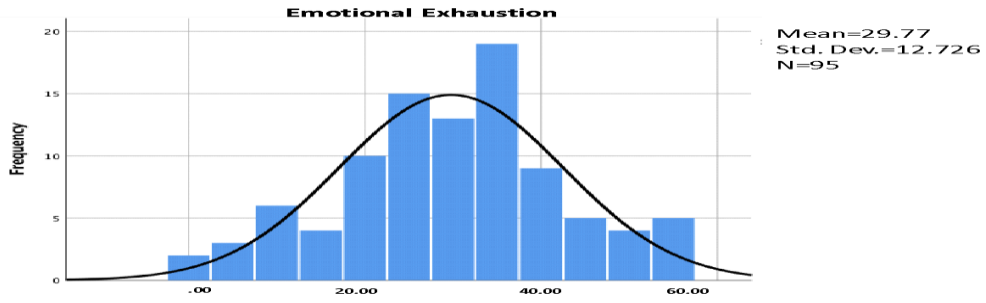
Table 2. Reliability of subscales

Scale	Cronbach's alpha
Emotional exhaustion (9 questions)	0.899
Personal achievements (8 questions)	0.874
Depersonalization (5 questions)	0.818

Inferential analysis

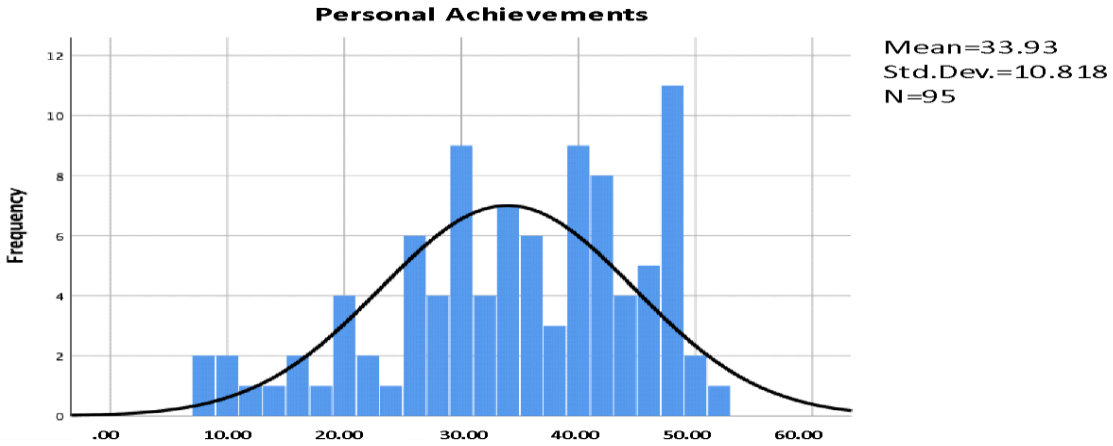
The analysis of the data shows that burnout based on emotional exhaustion is mostly at high levels but also moderate. The average score of emotional exhaustion is 30 points and the standard deviation is 12.73 points (Figure 3). 62.1% of the sample reported high burnout levels based on emotional exhaustion scores, while 22.1% reported moderate burnout and 18.8% reported low burnout levels.

Figure 3. Bar chart of sample's emotional exhaustion



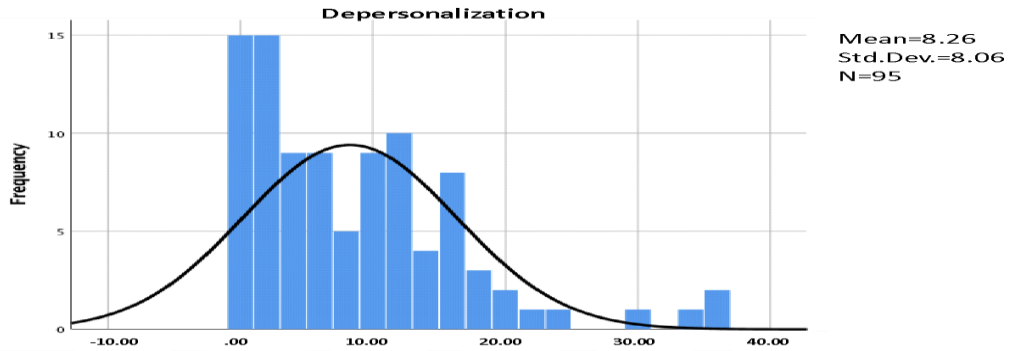
Burnout based on personal achievement is mostly of moderate level (mean score=33.93) (Figure 4). 42.1% of the sample reported low burnout levels based on personal achievement scores, while 37.9% reported high burnout and 20% moderate levels.

Figure 4. Bar chart of sample's personal achievements



Burnout based on depersonalization ranges from mostly moderate levels but also to low and high levels (mean score=8.3) (Figure 5). 50.5% of the sample is characterized by low burnout levels based on depersonalization scores. 25.3% of the sample are on moderate levels and 24.2% on high levels.

Figure 5. Bar chart of sample's depersonalization



The independent Samples t-Test showed a statistically significant difference in emotional exhaustion between men and women ($p < 0.05$) (Table 3). The mean of emotional exhaustion in women (M=32.36) is higher than the mean in men (M = 22.88). Gender does not appear to have a statistically significant effect on personal achievement ($p>0.05$) and depersonalization ($p>0.05$) according to the Mann Whitney U test.

Age has a statistically significant effect ($p<0.05$) on emotional exhaustion and older people are more burdened than younger people according to the results of the one-way ANOVA test (Table 3). The emotional exhaustion average score at 35-45 years is 17.41 points lower than the average score at 45-55 years. Also, the emotional exhaustion average score at 35-45 years is 14.51 points lower than the average score at 55-65 years.

The Kruskal Wallis test showed that age has a statistically significant effect on depersonalization, with older individuals being more affected (p<0.05). No statistically significant relationship has been found with the dimension of personal achievement (p>0.05). The level of education has not been found to have a statistically significant effect on emotional exhaustion (p>0.05) and on personal achievement (p>0.05). A statistically significant relationship has been found between the level of education and depersonalization (p<0.05), with the latter increasing in people with a lower level of education.

Table 3. Comparison of means

	Emotional exhaustion	Personal achievements	Depersonalization
Gender	t(93)=-3.415, p=0.001	U=790000, p=0.371	U=804000, p=0.436
Age	F(4.90)= 4.681, p=0.002	H(4)=0.822, p=0.935	H(4)=14.119, p=0.007
Education	F(3.91)=0.825, p=0.483	H(3)=7.135, p=0.068	H(3)=11.340, p=0.010
Employment relationship	F(2.92)=6.190, p=0.003	H(2)=1.623, p=0.444	H(2)=2.337, p=0.311
Years of service	F(6.87)=2.880, p=0.013	H(6)=6.878, p=0.332	H(6)=3.718, p=0.715
Job (Employment department)	F(7.87)=3.442, p=0.003	H(7)=10.898, p=0.143	H(7)=5.614, p=0.585
Colleagues from the workplace with COVID-19	F(2.91)=1.908, p=0.154	H(2)=4.550, p=0.103	H(2)=1.174, p=0.556
Quarantine due to contact with a suspected case	t(93)=-0.058, p=0.954	U=583000, p=0.296	U=598500, p=0.368
Disease with COVID-19	t(93)=0.277, p=0.783	U=252.500, p=0.824	U=265.500, p=0.982

Employment relationship, years of service and the job seem to be statistically significantly related to emotional exhaustion (p<0.05). Permanent employees experience emotional exhaustion with the average score being 10.20 points higher than the average score of employees under fixed-term employment contracts governed by private law. Also, the emotional exhaustion average score in employees under private law contracts of indefinite duration is 19.63 points higher than the average score in employees under fixed-term employment contracts governed by private law. Administrators with 25-30 years of service experience greater emotional exhaustion with the average score being 18.73 points higher than that of employees with 1-5 years of service.

Employment in the Procurement Department corresponds to a higher average score of emotional exhaustion by 17.85 points than the average score of employees in the Finance Department and by 20.84 points higher than the average score in the employees of the IT Department. The means of the above job factors are non-statistically signifi- cant with personal achievements and depersonalization.Non statistically significant relationships have been found between the mean values of the variables of theirs or their colleagues's corona virus diseaseand quarantine due to contact with suspected cases, with the average score of emotional exhaustion, personal achievement and depersonalization.

Multinomial Logistic Regression Analysis

To further study the effect of socio-demographic and job factors on the three subscales of burnout, multinomial logarithmic regression has been used. For this purpose, three equations have been studied, where in the first, the categorical variable "emotional exhaustion" was set as a dependent variable with three categories, low, moderate and high score. Similarly, the categorical variable "personal achievements" and the categorical variable "depersonalization" were set as dependent. Socio-demographic and job factors were set as explanatory variables, i.e. gender, age, education, employment relationship, years of service, job.

The independent variables have as their reference category their last category.The relationship between the dependent variable and the set of independent variables is based on the statistical significance of the final model chi-square value. The probability of each of the three models chi-square value is shown in Table 4, while respective p-value is less than 0.05. The three models have been found statistically significant. The goodness of fit of each model is assessed by the Nagelkerke's R^2 measure, according to which the independent variables in the first model explain 72.5% of the dependent variable and 57% and 61.2% in the second and the third model (Table 4).

Table 4. Model Fitting Information

Model	-2 Log Likelihood	Chi-Square	df	Sig.
Emotional Exhaustion (Pseudo R^2 (Nagelkerke)=0.725)				
Intercept Only	169.047			
Final	80.330	88.717	46	.000
Personal Achievements (PseudoR^2 (Nagelkerke)=0.570)				
Intercept Only	189.351			
Final	123.929	65.421	46	.031
Depersonalization (Pseudo R^2 (Nagelkerke)=0.612)				
Intercept Only	183.545			
Final	111.425	72.120	46	.008

Table 5 shows the significance of the regression coefficients (logits), which when converted into odds, are the values given as Exp(B) (also called as Odds). The results are discussed for each category of outcome of dependent variable separately, keeping the outcome "High", the category with the highest frequency as the reference category. Meaning, two comparisons are made: one is "low" which will be compared to the "High" group. The other one is: "moderate" which will be compared to the "high" group. The statistical significant results of the parameter estimated at 5% for the three logistic regression models are given in Table5.

Table 5. Multinomial logistic regression parameter estimates for significant results

			Exp(B)	Sig.	95% C.I. for Exp(B)	
					Low	High
Emotional Exhaustion[a]						
Low	Age	[18-25 years]	0.263		0.26	0.26
		[25-35 years]	8.074E+14		8.074E+14	8.074E+14
		[35-45 years]	**153.20**	**0.038**	**1.336**	**1.76E+04**
		[45-55 years]	0.320	0.413	0.021	4.907
		[55-65 years]	Reference category			
Moderate	Independent Variables			Ns		
Personal achievements[a]						
Low	Independent Variables			Ns		
Moderate	Working experience	**[1-5 years]**	**2.8E+07**	**0.000**	**5.5E+05**	**1.4E+09**
		[5-10 years]	1.001E-013	0.998	0.000	.[b]
		[10-15 years]	**2.9E+08**	**0.000**	**6.6E+06**	**1.3E+10**
		[15-20 years]	**1.7E+07**	**0.000**	**5.6E+05**	**5.1E+08**
		[20-25 years]	**3.6E+08**	**0.000**	**3.1E+07**	**4E+09**
		[25-30 years]	9.3E+07		9.3E+07	9.3E+07
		[>30 years]	Reference category			
Depersonalization[a]						
Low	Education	**[Compulsory Education]**	**0.029**	**0.029**	**0.001**	**0.690**
		[Secondary Education]	0.625	0.736	0.041	9.644
		[Higher Education]	0.261	0.333	0.017	3.960
		[Graduate Studies]	Reference category			
Moderate	Working experience	[1-5 years]	1.042E-013	.982	0.00	.[b]
		[5-10 years]	1.000E-013	.993	0.00	.[b]
		[10-15 years]	1.081E-013	.988	0.00	.[b]
		[15-20 years]	**1.107E-008**	**.000**	**5.225E-010**	**2.344E-007**
		[20-25 years]	**2.090E-007**	**.000**	**2.852E-008**	**1.532E-006**
		[25-30 years]	7.809E-008		7.809E-008	7.809E-008
		[>30 years]	Reference category			

a. The reference category is: High.

b. Floating point overflow occurred while computing this statistic. Its value is therefore set to system missing

Ns: Not significant

From the results of the multinomial logistic regression analysis, the possibility of a low level of emotional exhaustion can be predicted from the age of 35-45 years ($p<0.05$). The odds of having low emotional exhaustion versus high is about 153.20 times for the staff aged 35-45 years compared to those aged 55-65 years. However, among that administrative staff aged 18-25 and that aged 45-55, the odds of having low emotional exhaustionare decreased by 74% and 68%, respectively compared to that aged 55-65. There is no significant effect of gender, education, employment relationship, years of service and job on emotional exhaustion.

The likelihood of developing moderate level personal achievement can be predicted from the years of service. Typically, employees with 1-5 years of service, 10-25 years are more likely to develop moderate personal achievements. There was no significant effect of the other independent variables on personal achievements.

The likelihood of developing low level of depersonalization is reduced by 97% in employees with a low level of education compared to holders of postgraduate degrees which is significant at 5% level. The likelihood of developing moderate level of depersonalization decreases compared to the likelihood of developing high level of depersonalization for the years of service 15-20 and 20-25 years compared to more than 30 years of service. There was no significant effect of gender, education, employment relationship, years of service and job.

Furthermore, the classification table 6 for the equation with dependent variable "emotional exhaustion" shows that overall, the model the logistic multinomial model is suitable because it correctly 84.04% of the cases into their respective groupsand can be expected to project future estimates

Table 6. Classification table

Emotional Exhaustion				
Observed	*Predicted*			
	Low	Moderate	High	Percent Correct
Low	12	1.00	2.00	**80.00%**
Moderate	0	12.00	9.00	**57.14%**
High	2	1.00	55.00	**94.83%**
Overall Percentage	14.89%	14.89%	70.21%	**84.04%**
Personal achievements				
Observed	*Predicted*			
	Low	Moderate	High	Percent Correct
Low	31	1.00	7.00	**79.49%**
Moderate	4	10.00	5.00	**52.63%**
High	9	2.00	25.00	**69.44%**
Overall Percentage	46.81%	13.83%	39.36%	**70.21%**
Depersonalization				
Observed	*Predicted*			
	Low	Moderate	High	Percent Correct
Low	39	4.00	4.00	**82.98%**
Moderate	10	13.00	1.00	**54.17%**
High	6	2.00	15.00	**65.22%**
Overall Percentage	58.51%	20.21%	21.28%	**71.28%**

Finally, it is worth noting that in the open question where administrators were asked to record additional information, the majority, 87 administrator officers out of 95 (91.6%) pointed to the need for training and support.

DISCUSSION

This research showed that administrators experience a high degree of burnout in the workplace during the pandemic period. 62.1% of the sample experience high levels of emotional exhaustion with moderate levels of depersonalization and moderate levels of personal achievement. Hassamal et al. [7] in their study that conducted during the pandemic, reached the same results according to which administrative and support staff with indirect contact with COVID-19 patients are likely to be equally or more depressed than doctors and nurses.

Gender and age are statistically significantly related to burnout experienced by administrators. Women are more affected than men. Older employees show the highest levels of burnout. Hassamal et al. [7], Sikaras et al. [9] and Shahin et.al. [16] reached similar results. Also, the low level of education seems to be consistent with a low score on personal achievements. Employment relationship, years of service and the job are statistically significantly related to administrators' burnout. Shahin et al. [16] also note the associations of burnout with educational level and sources of stress in the workplace.

Multinomial logistic regression analysis verifies the above, in terms of age, level of education and years of service, as these are factors which can predict the levels of burnout in terms of emotional exhaustion, personal achievement and depersonalization that administrators experience. The profile of the participants in the research can explain the above findings, as they are mostly staff with many years of service in a hospital environment, lready affected by work stress that worsened during the pandemic.Previous study of Siameti and Stathi [17] estimated the burnout of the administrative staff of the under study Hospital in terms of high level of depersonalization and low level of personal achievements. The results are consistent with and verify the literature that states that work and environmental factors have a greater impact on burnout than demographics [11],[16]-[20].

According to our study permanent employees are more emotionally exhausted than employees under fixed-term employment contracts governed by private law employees. The shorter working hours of employees under fixed-term employment contracts governed by private law in the hospital and the comparatively younger age of them seem to be compensating factors for the burnout they experience. The employees of the Procurement department show higher levels of burnout, a finding which stands to reason, as in stressful working conditions they are called to complete complex and highly demanding procedures for the supply of sanitary material, consumables and equipment. Differentiation in the role of years of service in emotional exhaustion seems to be found between this study and that of Hassamal et al. [7] according to which staff with less work experience are particularly susceptible to mental health disorders. This differentiation can be explained by the profile of the administrators of our research with many years of service in combination with the working conditions during the pandemic period.

However, this study presents a number of limitations, mainly in terms of the fact that it is synchronous and therefore we cannot determine the causal relationships and conclusions and howthese relationships change over time. Future re- search could focus on different specialties of the Hospital and results could be presented compara- tively to provide useful information for the Man- agement. Also, the comparative presentation of the results from the application of the question- naire to the administrative staff of different Hospi- tals in Greece, taking into account its geographical location, may lead to a generalization of the conclusions. In addition, future research could focus on studying the effectiveness of the measures taken regarding the management and reduction of employee stress.

Despite the possible reservations about the representativeness of the sample, the results help to highlight key actions that can be taken to empower administrative staff.The COVID-19 pandemic has brought about changes in the way of working and in the work environment leading to physical and mental imbalance and, consequently, to increased levels of stress [20]-[26]. Digby et al. [8], Sikaras et al. [9], Tselebis et al. [21] refer to emotional states associated with burnout, such as acute stress reactions, anxiety, fear, moral decline, and post-traumatic stress disorder. Brooks et al. [22] note that mental health problems are associated with exposure to high-risk environments, restrictive measures, insufficient support, and lack of subjectively perceived safety. Burnout is part of a process of developing work-related depression [22],[23],[24]. Burnout and other forms of work-related psychological distress are inevitable occupational health issues. One of the first lessons the pandemic taught us is the need to acknowledge the contribution of all health workers and the need to appropriately train, support, protect and compensate them. Singh et al. [10] highlight the need to implement well-planned formal sessions of training workshops and lectures since health workers learn about COVID-19 from their practical exposure. Therefore, strategies towards health workers self-development and empowerment must be established. The COVID-19 pandemic revealed a complex set of skills utilized in a short period of time, skills that helped individuals, teams and organizations to deal with COVID-19 consequences [27]. A systematic focus on knowledge improvement and on effective communication skills [27] will facilitate health workers to adapt to the unpredictable conditions brought about by COVID-19. Moreover, hospitals' policy makers must improve the workplace environment based on the measures required for reducing stress [28],[29]. Health and safety promotion in the workplace is vital to the functioning and overall satisfaction of staff. Finally, these strategies by focusing on upskilling and reskilling of the hospitals staff and on health and safety promotion in the workplace will also contribute to decreasing the level of burnout that administrative staff experience in the workplace. Organizations should foster managers and employees to receive an appropropriate level of training and health support in order to develop competencies that lead to individual and team efficiency as well organization efficiency.Such capabilities are constantly associated with better performance, resilience and flexibility of health workers and organizations themselves.

CONCLUSION

Burnout of the administrative staff of the under study COVID-19 reference Hospital in Attica-Greece is at high levels. The majority of the staff experience high levels of emotional exhaustion with moderate levels of depersonalization and moderate levels of personal achievement. Socio-demographic and occupational factors (e.g. age, gender, education and years of services) affect the burnout that administrative staff experience. Women and older employees are more affected, while employees with low level of education seem to have low score on personal achievements. Employees with more years of working experience are likely to have high level of depersonalization.

The analysis of the data confirms the findings of various studies internationally and reinforces the assumption that burnout is influenced by the socio-demographic characteristics of staff and work factors. The conclusions underline the need for measures which aim at the development and empowerment of staff, which will make a positive contribution to reducing the burden they experience. The challenges faced by the staff before the pandemic, such as work shifts, night shifts, workload have been intensified due to the pandemic, while at the same time issues of structure, roles and responsibilities, autonomyand need for support have emerged. The conditions created by the pandemic require a shift in focus on prevention through the learning of stress management techniques and the provision of psychological support for mental health and well-being. Essential communication with management to solve day-to-day problems will improve staff performance.

Moral and financial reward, continuing education, upskilling and re-skilling will empower staff and enhance their competitive edge in a highly demanding period.After all, a well-performing health sector human resource is one that operates in flexible,responsive, equitable and efficient ways to achieve optimal health outcomes, given the resources and circumstances available.One of the first lessons the pandemic taught us is the need to acknowledge the contribution of all health workers and the need to appropriately train,support,protect and compensate them.

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REFERENCES

1. WHO Director-General's opening remarks at the media brief- ing on COVID-19 – 11 March 2020. [Internet]. World Health Organization (WHO) (Press release), 11 March 2020 [cited 2022Apr 22]; A
2. Wu D, Wu T, Liu Q, Yang Z. The SARS-CoV-2 outbreak: what we know. Int J Infect
3. WHO. Laboratory testing for corona virus disease (COVID-19) in suspected human cases: interim guidance, 2020 [cited 2021 Feb 2].
4. Chagas AM, Molloy JC, Prieto-Godino LL, Baden T. Leveraging Open Hardware to alleviate the burden of COVID-19 on global health systems. PLoS Biology 2020;18(4):e3000730.
5. Azoulay E, De Waele J, Ferrer R, Staudinger T, Borkowska M, Povoa P, Iliopoulou K, Artigas A, Schaller SJ, Shankar Hari M, Pellegrini M, Darmon M, Kesecioglu J, Cecconi M. Symptoms of burnout in intensive care unit specialists facing the COVID- 19 outbreak. Ann Intensive Care 2020;10(1):1-8.
6. Mehta S, Machado F, Kwizera A, Papazian L, Moss M, AzoulayE, Heridge M. COVID-19: a heavy toll on health-care workers. Lancet Resp Med 2021;9(3):226-228
7. Hassamal S, Dong F, Hassamal S, Lee C, Ogunyemi D, Neeki MM. The Psychological Impact of COVID-19 on Hospital Staff.West J Emerg Med 2021;22(2):346-352.
8. Digby R, Winton-Brown T, Finlayson F, Dobson H, Bucknal T. Hospital staff well-being during the first wave of COVID-19: Staff perspective. Int J Ment Health Nurs2021;30:440-450.
9. Sikaras C, Ilias I, Tselebis A, Pachi A, Zyga S, Tsironi M., Rojas Gil A.P., Panagiotou A. Nursing staff fatigue and burnout dur- ing the COVID-19 pandemic in Greece. AIMS Public Health 2021;9(1):94-105.
10. Singh S, Govindagoudar MB, Chaudhry D, Singh PK, Vashist MG. Assessment of knowledge of COVID-19 among health care workers-a questionnaire-based cross-sectional study in a tertiary care hospital of India. AIMS Public Health 2021;8(4):614-623.
11. Pesiridis Th, Galanis P, Anagnostopoulou E, Kalokerinou A, Sourtzi P. Providing care to patients with COVID-19 in a refer- ence hospital: health care staff intentional behavior and factors that affect it. AIMS Public Health 2021;8(3):456-466. doi: 10.3934/publichealth.2021035
12. Maslach C, Jackson SE, Leiter MP. MBI: Maslach Burnout Inventory. Sunnyvale, CA: CPP, Incorporated; 1996
13. Monsalve-Reyes.CS, San Luis-Costas C, Gómez-Urquiza JL, Albendín-García L, Aguayo R, Cañadas-De la Fuen, GA. Burnout syndrome and its prevalence in primary care nursing: a system-atic review and meta-analysis. BMC Fam Pract 2018;19,59 . doi: https://doi.org/10.1186/s12875-018-0748-z
14. Papadatou D, Anagnostopoulos F, Monos D. Factors contributing to the development of burnout in oncology nursing. Brit J Med Psych 1994;67:187-199.
15. Lawshe.H.A quantitative approach to content validity.
16. Shahin MA, Al-Dubai SAR, Abdoh DS, Alahmadi AS, Ali AK, Hifnawy T. Burnout among nurses working in the primaryhealth care centers in Saudi Arabia, a multicenter study. AIMS Public Health 2020;7(4):844-853.
17. SiametiM, StathiV. Professional burnout of health personnel. The case of the General Hospitals of Arta and Elefsina "Thrias-sio" [BSc Thesis]. Greece, Kalamata: Technological Educa- tional Institute of Kalamatas; 2007 [InGreek]
18. Wirth T, Mette J, Prill J, Harth V, Nienhaus A. Working condi- tions, mental health and coping of staff in social work with ref-ugees and homeless individuals: A scoping review. Health Soc Care Community2019;27:257-269.
19. Maslach C. Burnout and engagement in the workplace: New perspectives. Europ Health Psych 2011;13(3):44-47.
20. Shanafelt T, Ripp J, Trockel M. Understanding and addressing sources of anxiety among health care professionals during the COVID-19 pandemic. JAMA 2020;323(21):2133-2134.
21. Tselebis A, Lekka D, Sikaras C, Tsomaka E, Tassopoulos A, IliasI, Bratis D, Pachi A. Insomnia, Perceived Stress, and Family Support among Nursing Staff during the Pandemic Crisis. Healthcare (Basel)2020;8(4):434.
22. Brooks SK, Dunn R, Amlot R, Rubin GJ, Greenberg N. A system-atic, thematic review of social and occupational factors associ-ated with psychological outcomes in healthcare employees during an infectious disease outbreak. J Occup Environ Med 2018;60(3):248-257.
23. Zhou T, Xu C, Wang C, Sha S, Wang Z, Zhou Y, Zhang X, Hu D, Liu Y, Tian T, Liang S, Zhou L, Wang Q. Burnout and well-being of healthcare workers in the post-pandemic period of COVID- 19: a perspective from the job demands-resources model. BMCHealth Serv Res 2022;22(1):284.
24. Koutsimani P, Montgomery A, Georganta K. The relationship between burnout, depression, and anxiety: a systematic reviewand meta-analysis. Front Psychol 2019;1-19.
25. Ahola K, Hakanen J. Job strain, burnout, and depressive symptoms: a prospective study among dentists. J Affect Disord 2007;104(1–3):103-110.
26. Mohamed-Azzam Zakout Y, AlreshidiFS, ElsaidRM, Ahmed HG. The magnitude of COVID-19 related stress, anxiety and depression associated with intense mass media coverage in Saudi Arabia. AIMS Public Health 2020;7(3):664-678. doi: 10.3934/publichealth.2020052
27. Katharaki M. Applying Analytic Hierarchy Processtoanalyze therole of transferable skills in Project Management and the Development of Organizational Learning [MBA Thesis]. Greece: Hellenic Open University; 2021.
28. Da-Som Ch, Sang-Hee K. Factors Affecting Occupational Health of Shift Nurses: Focusing on Job Stress, Health Promo- tion Behavior, Resilience, and Sleep Disturbance. Safety and Health at Work 2022;13(1): 3-8.
29. Adikari PS, Pathirathna KGRV, Kumarawansa WKWS, Kog- galage PD. Role of MOH as a grassroots public health manager in preparedness and response for COVID-19 pandemic in Sri Lanka. AIMS Public Health2020;7(3):606-619.