Original Article

Empathy and Burnout of Healthcare Professionals in Public Hospitals of Greece

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Abstract

Background: Empathy plays a crucial role in the interaction between healthcare professionals and patients. The use of empathy and empathetic skills regarding to healthcare professionals' burnout is expected to have a positive impact on the overall patient experience.
Objective: To investigate the level of empathy and burnout of healthcare professionals in Public Hospitals and their determinants.
Methodology: A cross-sectional study was conducted in May of 2018. The study sample consisted of 173 healthcare professionals of various specialties and the response rate was 75.2%. Data were collected using the Jefferson Scale of Physician Empathy-Health care professionals (JSE-HP) and the Meshach's Burnout Inventory (MBI) that were voluntarily completed by study participants.
Results: Empathy score was relatively high (mean value=102, SD±16.2) while burnout score was quite moderate (mean value=38.1, SD±18.8). The three dimensions of burnout, emotional exhaustion (mean value=21.3, SD±11.8), depersonalization (mean value=7.2, SD±6.1) and personal accomplishment (mean value=38.1, SD±7.6) were also found at moderate levels. Among demographic factors, female participants and those who worked at Pediatric, Cardiological, Pathological, Psychiatric, Artificial Kidney Unit, Regular Outpatient Clinics and Emergency Department had higher empathy scores.
More years of total service were related to lower overall burnout scores and higher depersonalization scores. Those who worked at Pediatric, Cardiological, Pathological, Psychiatric, Artificial Kidney Unit, Regular Outpatient Clinics and Emergency Department, had higher emotional exhaustion scores and male participants had higher depersonalization scores than female. In addition, higher empathy score was correlated with lower burnout, lower depersonalization and higher personal accomplishment scores.
Conclusion: The findings suggest that empathy is negatively associated with burnout. Enhancing healthcare professionals' ability for empathy through systematic training programs may have significant effects against the burnout syndrome.

Key words: Empathy, Burnout, Emotional Exhaustion, Depersonalization, Personal Accomplishment, Health Professionals

Introduction

Over the past twenty years, scientific research has focused on the factors that can shape the context, influence and optimize the relationship between healthcare professionals and patients, considered as an integral part of effective medical practice (Larson & Yao, 2005; Mead & Bower, 2000). Providing empathic care (defined as a healthcare practitioner' s ability to understand a patient's point of view, express this understanding, and make a recommendation that reflects the shared understanding; Larson & Yao, 2005) can improve doctor-patient relationship thus resulting in better patient's confidence in and compliance to/with treatment (Williams et al., 2015; Williams et al., 2014a; Neumann et al., 2012), improved clinical outcomes (Yuguero Torres et al., 2015; Kelm et al., 2014; Williams et al., 2014b) and higher patient satisfaction (Lelorain et al., 2012; Epstein et al., 2007; Anfonsi & Numico, 2004; Mercer & Reynolds, 2002). In addition, empathic care helps to increase healthcare professionals' job satisfaction (Kelm et al., 2014; Thomas et al., 2007; Mercer & Reynolds, 2002), improve interpersonal relationships and co-operation (Beach & Inui, 2006; Baggs & Schmitt, 1997), effectively handle complicated situations, and solve conflicts with patients (Halpren, 2007). It has also been associated with a reduction in health care costs, given that improved communication between healthcare professionals and patients can prevent the latter from unnecessarily wandering in the healthcare system and from increasing the diagnostic tests' cost (Kelm et al., 2014; Williams et al., 2014a; Epstein et al., 2005).

Burnout syndrome refers to the experience of long-term exhaustion and reduced interest (depersonalization or cynicism) in the workplace. It is often interpreted as a result of a period of excessive effort at work (Gosseries et al., 2012; Demerouti & Baker, 2011; Embriaco et al., 2007). Healthcare professionals are exposed to high levels of anxiety with significant effects on themselves, the patients and the healthcare system as well. It has been noted that 70% of physicians and 30-50% of nurses worldwide experience professional burnout during their working life (Wilkinson et al., 2017). High burnout levels are associated with low quality levels of the services provided (Poghosyan et al., 2010). In addition, high burnout frequently causes absences in the workplace and increased work-related stress (Potter et al., 2010), while it potentially leads to hostile attitudes towards patients, medical errors, conflicts with colleagues, psychosomatic symptoms, and mental health problems (Des Camp & Talarico, 2016; Kumar, 2016; Anagnostopoulos et al., 2015; Embriaco et al., 2007).

Low empathy levels are associated with high burnout levels (Ferri et al., 2015; Lamothe et al., 2014; Tei et al., 2014; Walocha et al., 2013; Passalacqua & Sergin, 2012; Lee et al., 2003). Moreover, it has been found that high empathy levels can protect professionals against the development of burnout (Thirioux et al., 2016; Ferri et al., 2015; Lamothe et al., 2014). However, few studies have been carried out focusing on the relationship between empathy and burnout, while most of them have been conducted on doctors and nurses, not including all kinds of healthcare professionals.

Purpose of the study

The purpose of the present study was to evaluate the levels of empathy and the degree of healthcare professionals' burnout in General Hospitals, as well as to find significant factors empirically related to empathic care, exploring correlations between empathy and burnout.

Methodology

Participants and study design

A cross-sectional study was conducted in May 2018 using the convenience sampling method. The study sample consisted of 173 healthcare professionals of various specialties, who worked at a Public Regional General Hospital in Northern Greece. The response rate was 75.2% (=173/230). Participation in the current study was voluntary and participants' anonymity was ensured. Different kinds of healthcare professionals, such as doctors, nurses, physiotherapists, psychologists etc., either at a permanent or at a temporary working status, were included in this study.

Measuring tools

To investigate the level of empathy among healthcare professionals, the Jefferson Scale of Physicians Empathy-Health Professions (JSPE-HP) was used. This questionnaire includes 20 questions and participants are invited to answer on the basis of a 7 point Likert scale. The higher the average score is, the greater the self-reported level of empathy is (Williams et al., 2014a;

Williams et al., 2014b; Del Canale et al., 2012; Ouzouni & Nakakis, 2012; Hojat et al., 2002). Internal consistency reliability assessed by Cronbach's alpha coefficient has been reported previously as 0.81 (Hojat et al., 2009). Reliability estimation of the Jefferson Scale of Physicians Empathy had been shown that the scale had good internal consistency (a=0.78) (Ozouni & Nakakis, 2012). Examples of the items included in the scale are as follows: "I believe that empathy is an important therapeutic factor in the medical treatment" or "Because people are different, it is difficult to see things from patients' perspectives".

The Maslach Burnout Inventory (MBI) includes 22 questions, has been used to measure job burnout and the answers are also scored on the basis of a 7 point Likert scale. This questionnaire includes the following three dimensions of professional burnout: a) emotional exhaustion, b) depersonalization, and c) personal accomplishments. High average scores of emotional exhaustion and depersonalization and lower average scores of personal accomplishments correspond to higher levels of job burnout (Maslach & Leiter, 2016; Papadatou, Anagnostopoulos, & Monos, 1994; Maslach & Jackson, 1981). The questionnaire was first modified in Greece by Anagnostopoulos and Papadatou in 1992, in a sample of nurses. The limit values for the three burnout dimensions corresponding to low, moderate and high levels: Emotional exhaustion: low $\leq$ 20, moderate 21-30, high $\geq$ 31, Depersonalization: low $\leq$ 5, moderate 6-10, high $\geq$ 11 and Personal accomplishment: low $\geq$ 42, moderate 41-36, high $\leq$ 35. Examples of the items included in the scale are as follows: "I feel empty, as if nothing is inside me, when I finish work" or "Direct contact with people makes me feel tension/stress".

The Cronbach's alpha reliability coefficient was 0.742 for the JSPE-HP scale and 0.762 for the MBI scale, a finding that indicated an acceptable internal consistency reliability for both tools.

Data analysis

The categorical variables are presented as absolute (n) and relative (%) frequencies, while quantitative variables are expressed as means and standard deviation. The Kolmogorov-Smirnov test was applied in order to test the hypothesis of normality.

Student's t-test was used to test the null hypothesis that the means of two sets of continuous data, following the normal distribution, are equal, while analysis of variance (one-way ANOVA) was used to investigate the existence of associations between quantitative variables with >2 categories. To measure linear associations between two quantitative variables with normal distribution, Pearson's correlation coefficient was applied, while to test for monotonic associations between the rankings of two quantitative variables Spearman's nonparametric correlation coefficient was applied.

In case that the dependent variable was a quantitative variable and >2 independent variables resulted in a 0.2 level ($p < 0.20$) in the bivariate analysis, a multiple linear regression was applied. More specifically, the method of multiple linear regression was used applying the stepwise procedure for selecting independent variable, while, regression coefficients, p-values, and the corresponding 95% confidence intervals, were calculated.

The bilateral level of statistical significance was set at 0.05. Data analysis was performed with the IBM SPSS 21.0 (Statistical Package for Social Sciences).

Ethical considerations

The study was approved by the Ethics and Administration Department of the Regional General Hospital and by the 4th Health District of Macedonia-Thrace as well. The anonymity and confidentiality of the data have been maintained according to the Hellenic Data Protection Authority.

Results

Study sample

The study sample consisted of 173 healthcare professionals whose demographic characteristics are presented in Table 1 (see Appendix for all Tables). The majority of the participants (85.5%) were women, 42.2% were 40-49 years old, 70.5% were married, 91.3 % had a Bachelor's degree, 93.6% were employees, 27.4% worked at the Pediatric, Pathological, Cardiological and Psychiatric Hospital Departments, 51.2% were nurses and 33.1% had over 26 years of service, while the average service time at the current Hospital Department was 9.8 years.

Table1. Participants' demographic and work characteristics (N=173)

Characteristics	N (%)
Gender	
Male	25 (14.5)
Female	148 (85.5)
Age	
20-29 years old	15 (8.7)
30-39 years old	27 (15.6)
40-49 years old	73 (42.2)
50-59 years old	54 (31.2)
60 years old and above	4 (2.3)
Marital status	
Single	27 (15.6)
Married	122 (70.5)
Divorced	20 (11.6)
Widow	4 (2.3)
Educational level	
Bachelor's degree	158 (91.3)
Master's degree	15 (8.7)
Job Position	
Employee	161 (93.6)
Head Manager	8 (4.7)
Director	1 (0.6)
Head of department	2 (1.2)
Department	
Pediatric, Pathological, Cardiological, Psychiatric	46 (27.4)
Orthopedic, Surgery, Gynecology/Obstetrics, Anesthesiology	45 (26.8)
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	38 (22.6)
Microbiological, Biochemical/Biopathological, Radiological, Blood Donation	25 (14.9)
Administration Office, Social Service, Physiotherapy, Pharmacy, Paramedics	14 (8.3)
Professional Specialty	
Doctor	27 (15.7)
Nurse	88 (51.2)

Nurse Assistant	13 (7.6)
Other	44 (25.6)
Years of total service	
0-5 years	24 (14.0)
6-10 years	16 (9.3)
11-15 years	26 (15.1)
16-20 years	27 (15.7)
21-25 years	22 (12.8)
≥26 years	57 (33.1)
Years of service in the particular department	10.9 (9.8)[a]

Values are expressed as average (standard deviation) unless otherwise stated.
[a] Mean value (standard deviation)

Table 2. Bivariate associations between participants' demographic characteristics and total empathy score

Characteristics	Average total empathy score (standard deviation)	P Value
Gender		**0.01[a]**
Male	92.5 (13.6)	
Female	103.7 (16.1)	
Age		0.9[b]
Up to 39 years old	102 (17.4)	
40-49 years old	102.4 (15.5)	
>50 years old	101.6 (16.4)	
Marital status		0.2[a]
Single/Divorced/Widow	99.6 (18.1)	
Married	102.9 (15.4)	
Educational level		0.6[a]
Bachelor's degree	101.8 (16)	
Master's degree	104.1 (17.9)	
Job position		0.9[a]
Employee	102.1 (16.3)	
Head manager	102 (15.1)	
Specialty		0.3[b]
Doctor	102.2 (13.9)	
Nurse/Assistant Nurse	102.5 (16)	
Other specialties	119.5 (13.4)	

Years of total service		0.4[b]
0-10 years	104.9 (15.8)	
11-20 years	101.8 (17)	
≥21 years	100.7 (16)	
Hospital Department		**0.09[b]**
Pediatric, Pathological, Cardiological, Psychiatric Department	107.1 (15.8)	
Orthopedic, Surgery, Gynecology, Anesthesiology Department	100.1 (14.3)	
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	103.4 (16.2)	
Microbiological, Radiological, Biochemical, Biopathological, Blood Donation	100.1 (14.7)	
Administration Office, Social Service, Physiotherapy, Pharmacy, Paramedical	95.3 (22)	
Years of service at the particular department		0.3[b]
0-5 years	104.4 (16.4)	
6-15 years	102.6 (14.9)	
≥16 years	99.5 (17)	

[a] t-test [b] ANOVA

Table 3. Multiple linear regression with the total empathy score as dependent variable

	Coefficient B	95% confidence interval for B	P Value
Gender	11.28	4.62 έως 17.93	0.001
Hospital Department	-2.07	-3.95 έως -0.19	0.031

Table 4. Bivariate associations between participants' demographic characteristics and total burnout score

Characteristics	Average total burnout score (standard deviation)	P Value
Gender		0.2[a]
Male	42.9 (22.5)	
Female	37.3 (18.1)	
Age		0.7[b]
Up to 39 years old	40 (18.5)	
40-49 years old	38.4 (20.1)	
50 years old and above	36.5 (17.6)	
Marital status		0.9[a]
Single/Divorced/Widow	38.1 (17.4)	
Married	38.1 (19.5)	
Educational level		0.9[a]
Bachelor's degree	38.2 (19)	
Master's degree	37.6 (17.5)	
Job position		0.8[a]
Employee	38.3 (18.6)	
Head manager	39.5 (21.5)	
Specialty		0.6[b]
Doctor	42.2 (19.6)	
Nurse/Assistant Nurse	40.3 (18.6)	
Other specialties	27.5 (17.7)	
Years of total service		**0.04**[b]
0-10 years	44.8 (22.4)	
11-20 years	36.6 (17.3)	
≥21 years	36.2 (18.9)	
Hospital Department		0.2[b]
Pediatric, Pathological, Cardiological, Psychiatric Department	43.2 (19.7)	
Orthopedics, Surgery, Gynecology, Anesthesiology Department	36.3 (19.9)	
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	34.9 (15.7)	
Microbiology, Radiology, Biochemistry, Biopathology, Blood Donation	34.9 (18.1)	
Office of Administration, Social Service, Physiotherapy, Pharmacy, Paramedic	35.1 (19.1)	
Years of service at the particular department		0.3[b]
0-5 years	40.1 (21.4)	
6-15 years	36.5 (16.1)	
≥16 years	34.5 (17.2)	

[a] t-test [b]ANOVA

Table 5. Bivariate associations between participants' demographic characteristics and emotional exhaustion score

Characteristics	Average Emotional Exhaustion Score (standard deviation)	P Value
Gender		0.6[c]
Male	20.6 (12.3)	
Female	21.4 (11.8)	
Age		0.7[d]
Up to 39 years old	20 (12.4)	
40-49 years old	22.1 (12.2)	
>50 years old	21.1 (11)	
Marital status		0.2[c]
Unmarried/Divorced/Widow	19.6 (11.4)	
Married	22 (12)	
Educational level		0.5[c]
Bachelor's degree	21.1 (11.8)	
Master's degree	22.7 (12)	
Job position		0.3[c]
Employee	21,1 (11,6)	
Head manager	24,8 (14,7)	
Specialty		0.1[d]
Doctor	21.5 (11.7)	
Nurse/Assistant Nurse	23.4 (11.6)	
Other specialties	7.5 (4.9)	
Years of total service		0.3[d]
0-10 years	23.8 (13.8)	
11-20 years	19.8 (11.8)	
≥21 years	20.9 (10.8)	
Hospital Department		**0.01[d]**
Pediatric, Pathological, Cardiological, Psychiatric Department	25.2 (12.2)	
Orthopedic, Surgery, Gynecology, Anesthesiology Department	19.3 (10.4)	
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	21.6 (11.6)	
Microbiology, Radiology, Biochemistry, Biopathology, Blood Donation	15.8 (11.4)	
Administration Office, Social Service, Physiotherapy, Pharmacy, Paramedics	20 (13.2)	
Years of service at the particular department		0.8[d]
0-5 years	21.6 (12.4)	
6-15 years	20.6 (11.8)	
≥16 years	20.8 (11.5)	

[c] Mann-Witney test [d] Kruskall-Wallis test

Table 6. Bivariate associations between participants' demographic characteristics and depersonalization score

Characteristics	Average Depersonalization score (standard deviation)	P Value
Gender		**0.007**[c]
Male	10.5 (6.9)	
Female	6.7 (5.8)	
Age		**0.018**[d]
Up to 39 years old	9.1 (5.5)	
40-49 years old	6.9 (6.7)	
50 years old and above	6.3 (5.7)	
Family status		0.5[c]
Single/Divorced/Widow	7.9 (6.7)	
Married	6.9 (5.9)	
Educational level		0.7[d]
Bachelor's Degree	7.3 (6.2)	
Master's Degree	6.6 (5.8)	
Job Position		0.3[c]
Employee	7.4 (6.1)	
Head manager	5.6 (6)	
Specialty		0.5[d]
Doctor	9 (7)	
Nurse/Assistant Nurse	7.3 (6.2)	
Other specialties	8 (5.7)	
Total years of service		**0.03**[d]
0-10 years	9.6 (6.8)	
11-20 years	6.7 (6.4)	
≥21 years	6.4 (5.4)	
Hospital Department		0.8[d]
Pediatric, Pathological, Cardiological, Psychiatric Department	7.9 (7)	
Orthopedic, Surgery, Gynecology, Anesthesiology Department	7.6 (7)	
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	6 (4.9)	
Microbiology, Radiology, Biochemistry, Biopathology, Blood Donation	7 (5.7)	
Administration Office, Social Service, Physiotherapy, Pharmacy, Paramedic	7.4 (5.8)	
Years of service at the particular department		0.08[d]
0-5 years	8.7 (7)	
6-15 years	6.4 (5.9)	
≥16 years	5.8 (5.2)	

[c] Mann-Witney test [d] Kruskall-Wallis test

Table7. Multiple linear regression with depersonalization score as dependent variable

	Coefficient B	95% confidence interval for B	P Value
Gender	-3.29	-5.89 to -0.69	0.013
Total years of service	-1.16	-2.3 to 0.01	0.048

Table8. Bivariate accociations between participants' demographic characteristics and personal accomplishment score

Characteristics	Average depersonalization score (standard deviation)	P Value
Gender		**0.007**[c]
Male	10.5 (6.9)	
Female	6.7 (5.8)	
Age		**0.018**[d]
Up to 39 years old	9.1 (5.5)	
40-49 years old	6.9 (6.7)	
50 years old and above	6.3 (5.7)	
Family status		0.5[c]
Single/Divorced/Widow	7.9 (6.7)	
Married	6.9 (5.9)	
Educational level		0.7[c]
Bachelor's Degree	7.3 (6.2)	
Master's Degree	6.6 (5.8)	
Job position		0.3[c]
Employee	7.4 (6.1)	
Head manager	5.6 (6)	
Specialty		0.5[d]
Doctor	9 (7)	
Nurse/Assistant Nurse	7.3 (6.2)	
Other specialties	8 (5.7)	
Years of total service		**0.03**[d]
0-10 years	9.6 (6.8)	
11-20 years	6.7 (6.4)	
≥21 years	6.4 (5.4)	
Hospital Department		0.8[d]
Pediatric, Pathological, Cardiological, Psychiatric Department	7.9 (7)	

Orthopedic, Surgery, Gynecology, Anesthesiology Department	7.6 (7)	
Artificial Kidney Unit, Regular Outpatient Clinics, Emergency Department	6 (4.9)	
Microbiology, Radiology, Biochemistry, Biopathology, Blood Donation	7 (5.7)	
Administration Office, Social Service, Physiotherapy, Pharmacy, Paramedic	7.4 (5.8)	
Years of service at the particular department		0.08[d]
0-5 years	8.7 (7)	
6-15 years	6.4 (5.9)	
≥16 years	5.8 (5.2)	

[c] Mann-Witney test [d] Kruskall-Wallis test

Table9. Bivariate associations between empathy score and professional burnout score, emotional exhaustion score, depersonalization score and personal accomplishment score

	Empathy Score	
	Correlation Coefficient	**P Value**
Professional burnout score	r=-0.26	**0.01**
Emotional exhaustion score	ρ=-0.047	0.545
Depersonalization score	ρ=-0.356	**<0.001**
Personal accomplishment score	ρ=0.33	**<0.001**

* r= Pearson's correlation coefficient **ρ= Spearman's correlation coefficient

Empathy score

The average empathy score was 102 (±16.2) with a minimum value of 62 and a maximum value of 137. Table 2 presents the bivariate relationships between the demographic characteristics and the total empathy score. The application of multiple linear regression showed that women had a higher empathy score than men (p=0.01) and those who worked at the Pediatric, Pathological, Cardiological, Psychiatric Hospital Departments and those who worked at Regular Outpatient Clinics, Emergency Department and Artificial Kidney Unit showed greater empathy score than those who worked at other Hospital Departments (p=0.031) (Table 3*)*.

Burnout score

The average burnout score was 38.1 (± 18.8), with a minimum value of 1 and a maximum of 108. Table 4 shows the bivariate associations between demographic characteristics and the total burnout score. It was found that those who had fewer years of service had higher burnout score than those who had more years of service (p=0.04).

The average emotional exhaustion score was 21.3 (±11.8) with a minimum value of 1 and a maximum of 50. Table 5 presents the bivariate associations between demographic characteristics and emotional exhaustion score. It was found that those who worked at the Pediatric, Pathological, Cardiological, Psychiatric Hospital Departments and those who worked at Regular Outpatient Clinics, Emergency Department and Artificial Kidney Unit had greater emotional exhaustion than those who worked at other Hospital Departments (p=0.01).

The average depersonalization score was 7.2 (±6.1) with a minimum value of 0 and a maximum value of 27. Table 6 presents the bivariate associations between the demographic characteristics and the depersonalization score. After using the multiple linear regression, the

results of which are presented in Table 7, men were found to have a higher depersonalization score compared to women (p=0.038), and those who had fewer years of service had higher depersonalization score compared to those who had more years of service (p=0.048).

The average personal accomplishments' score was 38.1 (±7.6) with a minimum value of 11 and a maximum value of 48. Table 8 presents the bivariate associations between demographic characteristics and personal accomplishment scores. No statistically significant relations were found between the demographic characteristics of the participants and the personal accomplishment score.

Associations between empathy and professional burnout

Table 9 presents the bivariate associations between empathy and burnout, emotional exhaustion, depersonalization, and personal accomplishment. Empathy was negatively related to burnout and depersonalization, while positively associated with personal accomplishment. It turned out that as empathy score increased, burnout score decreased (p=0.01), depersonalization score also decreased (p<0.001), while personal accomplishment score increased (p <0.001).

Discussion

According to the results of the present study, the empathy score of healthcare professionals ranged at a relatively high levels, a finding consistent with other research findings (Teck Lee et al., 2017; Benabbas, 2016; Kataoka et al., 2009), whereas in other studies, empathy score was found at lower levels (Yuguero et al., 2017; Hojat et al., 2015; Lamothe et al., 2014). These conflicting results can be attributed to differences in the healthcare systems of the countries under comparison as well as to cultural differences that determine patients' expectations for an "ideal doctor".

Regarding gender difference, our results suggested that women had higher empathy score than men. These results are in line with international literature (Bratek et al., 2015; Ferri et al., 2015; Williams et al., 2015; Williams et al., 2014a; Williams et al., 2014b; Gleichgerrcht & Decety, 2013; Jani et al., 2012; Ouzouni & Nakakis, 2012; Hojat et al., 2009; Kataoka et al., 2009; Chen et al., 2007; Hojat et al., 2002). This can be attributed to biological and neurological reasons. In particular, van Honk et al. (2011) have shown that the testosterone hormone in men diminishes cognitive empathy, while Rueckert and Naybar (2008) referred to the role of the right brain hemisphere. The difference in empathy score between men and women is also interpreted to be the result of the socialization process, which emphasizes the cultivation of positive emotions in girls (Malikiosi- Loizou, 2003).

It was also found that the hospital department, where the healthcare professionals worked, was related to the total empathy score. Specifically, those working at the Pediatric, Pathological, Cardiological, Psychiatric departments and those working at Regular Outpatient Clinics, Emergency Department and Artificial Kidney Unit showed greater empathy score in relation to those working at the rest hospital departments. Similar studies have indicated that healthcare professionals whose specialty was patient-oriented had higher empathy scores than those whose specialty was technology-oriented (Chen et al., 2007; Thomas et al., 2007; Newton et al., 2000).

In our study, the total score of healthcare professionals' burnout was found to be quite moderate as was the score of the three burnout dimensions, namely: emotional exhaustion, depersonalization and personal accomplishments. These findings are consistent with that of several studies (Yuguero et al., 2017; Mpaltzi et al., 2012; Dilinta, 2010; Tsilia et al., 2014; Karaniadou et al., 2006). Nevertheless, other studies have reported high levels of emotional exhaustion and depersonalization and low levels of personal accomplishment (Teck Lee et al., 2017; Hojat et al., 2015).

Our results highlight that only the years of service were related to the total burnout score. More specifically, those who had fewer years of service showed higher burnout score than those who had more years, a finding that has been supported by other Greek surveys (Alexias et al., 2010; Dilintas 2010; Karaniadou et al., 2006). It is possible that experienced healthcare professionals can cope with the requirements of their job in a better way, handle patients' problems more effectively and have better networking within the hospital environment. Furthermore, they probably have already redefined their professional and personal goals, thus resulting in less anxiety compared with their

younger colleagues. The majority of these employees may as well have been promoted or moved to a less demanding department and consequently have been relieved themselves of stressful duties, such as rotating shiftwork, night shifts etc. (Alexias et al., 2010; Dilintas, 2010).

Concerning the emotional exhaustion score, it was found that only the department, where the employees worked, was significantly related to exhaustion. More specifically, those working at the Pediatric, Pathological, Cardiological, Psychiatric departments and those working at Regular Outpatient Clinics, Emergency Department and Artificial Kidney Unit showed greater emotional exhaustion than those working at the other hospital's departments. According to Koutelekos and Polykandriotis (2007) and Mpaltzis et al. (2012) employees at the Artificial Kidney Unit and the Psychiatric Department showed higher burnout levels. This may be attributed to the kind of the chronic diseases, to the treatment frequency (hemodialysis) and to emotional exhaustion.

An interesting finding of the present study is that an increased empathy level was associated with increased emotional exhaustion levels. In particular, healthcare professionals with human-oriented specialties, working at a department with increased emotional load and having direct and frequent contact with patients, had developed higher empathy levels while they experienced greater emotional exhaustion.

Nielsen and Tulinius (2009) applied a surveillance program to a group of general practitioners and found that empathy was associated with fatigue due to compassion, which caused emotional exhaustion. Lamothe et al. (2014) found that emotional involvement of healthcare professionals in patients' problems, when not accompanied by self-regulation of emotions, could lead to personal discomfort, fatigue and exhaustion.

Depersonalization was found to be gender-related, given that men showed higher depersonalization scores compared to that of women. Maslach et al. (2001) reported that although gender is not a strong prognostic burnout indicator, there is a slightly higher level of depersonalization among men. Other studies have also shown higher levels of depersonalization in men compared to women (Lamothe et al., 2014; Mpaltzis et al., 2012; Fulop et al., 2011). Ferri et al. (2015) stated that depersonalization is more related to emotional distancing from patients, and may represent a defensive mechanism for self-protection in order to avoid emotional exhaustion. It is likely that men use this mechanism more often to protect themselves from excessive emotional load (Fulop et al., 2011).

Moreover, the aspect of depersonalization was found to be related to the total years of service, since those who had fewer years of service had a higher depersonalization score compared to those who had more years. This can be explained by the fact that younger healthcare professionals, due to pressure and workload, do not have enough time to get in touch with their patients emotionally. In addition, those who have fewer years of service are more likely to be under a temporary employment status (e.g. fixed-term contracts), thus anxiety and insecurity may discourage them from investing emotionally in patients' care.

In the present study a negative correlation between the empathy score and the professional burnout score was found. Specifically, as the empathy score increased, the score of professional burnout decreased, a finding consistent with that of many other studies (Yuguero et al., 2017; Park et al., 2016; Yuguero et al., 2016; Ferri et al., 2015; Hojat et al., 2015; Yuguero Torres et al., 2015; Lamothe et al., 2014; Gleichgerrcht & Decety, 2013; Walocha et al., 2013; Hojat et al., 2010; Thomas et al., 2007; Baxter, 1992).

Also, a negative correlation was found between the empathy score and the depersonalization score. In particular, as the empathy score increased, the depersonalization score decreased. On the other hand, a positive correlation was found between the empathy score and the personal accomplishment score. In specific, as the empathy score increased the personal accomplishment score also increased. There was no statistically significant correlation of empathy with the dimension of emotional exhaustion, a finding consistent with the investigations of Yuguero et al. (2017), Yuguero et al. (2016), Hojat et al. (2015), Lamothe et al. (2014) and Baxter (1992).

A negative correlation between empathy and emotional exhaustion and depersonalization and a positive correlation between empathy and personal achievement have also been reported by

many studies (Park et al., 2016; Ferri et al., 2015; Brazeau et al., 2010; Thomas et al., 2007).

Limitations

The study sample included the healthcare professionals of one General Hospital, a fact that does not allow generalization of results to all healthcare professionals. In addition, only some of the demographic and professional characteristics of the participants were studied, while there is considerable need for further investigation.

Conclusions

The study suggests that empathy of healthcare professionals is associated with burnout. Hence, enhancing empathic skills through training programs, including emotional self-regulation techniques, can help healthcare professionals protect themselves from emotional exhaustion and burnout. Future research should focus on identifying the factors that can affect levels of empathy and burnout concerning doctors and nurses as well as the healthcare personnel in total.

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