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Research

Investigating burnout/occupational stress in relation to emotional intelligence and coping strategies in Greek nurses

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Aim: The purpose of this study was to examine the relationship between burnout, emotional intelligence, occupational stress factors, coping strategies and demographic variables in a sample of Greek hospital nurses.
Background: Nurses in general seem to experience intense occupational stress and high risk of burnout syndrome as well as absences and premature withdrawal from work due to the complex nature of their duties. Emotional intelligence is proven to have a protective role against both stressors and burnout.
Methods: A questionnaire survey was conducted in order to measure burnout, emotional intelligence, occupational stressors, coping strategies and demographic factors, in a sample of two hundred seventy one (N=271) nurses working in general and oncology hospitals in the Athens area.
Results: Analysis of the data demonstrated that married participants and those aged between 36 to 50 years, presented significantly higher levels of emotional exhaustion than other members of the nursing staff. The results also revealed a significant positive relationship between burnout and stressors at work, as well as a negative relationship between burnout and emotional intelligence, as expected.
Conclusion: According to simple linear regression, all occupational stress factors were identified as significant predictors of emotional exhaustion and depersonalization dimensions of burnout. Also, nurses demonstrating a better relationship quality with doctors and other colleagues seem to achieve lower burnout scores and higher emotional intelligence levels.

Keywords: *burnout, occupational stress factors, coping strategies, emotional intelligence, Greek hospital nurses*

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Introduction and background

Stressors, coping mechanisms, burnout and emotional intelligence

Global financial crisis, current socio-economical conditions, increased unemployment and new forms of labor such as part time working have created a rising sense of uncertainty, insecurity and workplace stress across the world and particularly in Greece. Hart and Cooper (2001) claim that workplace stress is a global phenomenon which causes significant negative consequences to both workers and companies alike. Occupational stress is nowadays recognized as a global challenge (Dewe, O'Driscoll & Cooper, 2010 and is defined as a human reaction to overwhelming pressure and demands coming from the workplace environment (Health and Safety Executive, 2013).

Under those circumstances emotional intelligence becomes a necessary and very important skill. Goleman (1995. 1998) himself notes that during these unstable times emotional skills could secure an occupational position to an individual. Thus, the more complex the working conditions and the collaboration among colleagues, the more important the emotional intelligence skills acquisition.

Stressors

Occupational stress is considered as an escalating hazard especially within professions such as medicine, dentistry, nursing and other health care professions, where higher levels of alcohol or drug use as well as suicidal thoughts are sometimes evident (e.g. Arnold, Silvester, Patterson, Robertson, Cooper & Burnes, 2005. National Institute for Occupational Safety and Health, 2008). In particular, nurses and other health professionals may suffer from mental illnesses, and appear to utilise mental health facilities more frequently than in previous years (Arnold et al., 2005). Apart from the nature of the profession, other important stressors include workload, insufficient manpower, time pressure, exposure to contagious diseases, lack of sleep, treating difficult or terminal patients, etc. (National Institute for Occupational Safety and Health, 2008). An equally important workplace stressor is work-family conflict. As Brough and O' Driscoll (2005) note, interactions among work and family obligations and commitments may cause conflicts which may in turn negatively influence workers, both physically and psychologically. According to Montgomery, Panagopolou and Benos's survey (2006), in a sample of Greek doctors, heavy workload was found to interfere with family and social obligations as the burden of the participants' daily emotional demands was carried home with them.

Furthermore, long hours and workload have negative effects on professionals' health and according to Arnold et al. (2005) it is widely observed that more than 40 working hours per week are considered non-productive and hazardous. Likewise, work shifts appear to be an unhealthy form of work which can lead to low satisfaction and productivity, and to greater health risks such as cardiovascular diseases and gastrointestinal disorders (e.g. Coolican, 2008. Kantas, 1998). Such forms of work might also influence family and social conditions due to the disruption of the person's normal circadian circles; the periods of time in which a person is normally awake or asleep respectively. Circadian rhythm is the biological endogenous system which determines the human sleep and waking patterns and is related to the secretion of the hormone melatonin. This system can be disrupted by external stimuli such as artificial light (Kantas, 1998).

Coping mechanisms

The term coping strategies refers to a person's attempt to alter environmental conditions or to control his/her feelings through his/her behavior and thoughts in order to handle a stressful condition or environment and as such coping strategies are considered one of the most important organizational issues (Arnold et al., 2005. Montes-Berges & Augusto, 2007).

Burnout

Another phenomenon closely related to stress is burnout syndrome. This syndrome, which has been studied in depth over the last decades (e.g. Freudenberger, 1974. Maslach, Jackson, & Leiter, 1996), appears when occupational stress factors become long-term unresolved issues and have a negative affect on a person, both physically and psychologically. These negative consequences are not limited to a strictly occupational level affecting a person's productivity but also affect family and social environments (Leiter & Maslach, 2007). Health care professionals in particular face a higher risk of burnout syndrome, work absence and premature retirement, reduced work satisfaction, etc. (National Institute for Occupational Safety and Health, 2008).

Burnout syndrome is considered a serious organizational issue for health care professionals. Health care professionals are frequently exposed to human suffering and death which alone is considered an important causal factor of this syndrome (Antoniou, 2007). Burnout is more likely to appear among medical staff working at oncology clinics. Health care workers employed within oncology units face specific work-

ing conditions such as dealing with cancer patients and their relatives, extended bureaucracy, emotional issues concerning death, and intensive care (Truffelli, Bensi, Garcia, Narahara, Abrao, Diniz, Da Costa Mirada, Soares & Del Giglio, 2008).

As Attica-based surveys suggest (Antoniou & Polychroni, 2008. Issari & Antoniou, 2014) psychiatric nurses are equally vulnerable to stressors and thus to burnout syndrome, due to work factors such as failed initial expectations, work-family conflicts, interpersonal relationships, and work environment conditions (heavy workload, insufficient manpower, etc.).

Emotional intelligence

Emotional intelligence as a term has become increasingly popular in recent years among the scientific community and the public alike. Goleman (1995) suggested that Intelligence Quotient (IQ) and Emotional Quotient (EQ) are two different non-contradictive qualities and set the Socratic quote "*gnothi seauton*" ("know thyself") as the corner stone of emotional intelligence id. a persons' ability to realize and recognize his/her emotions the moment they appear. Goleman (1995) also noted the importance of feelings in life and claimed that a medium-IQ but high-EQ person could be more successful in life than another with a higher IQ.

Emotional intelligence in general plays an important role in preserving successful human relations and feelings, which are especially important in creating a healing relationship and interaction between patients and healers (McQueen, 2004). Moreover since emotions can be helpful in dealing with stressors and burnout (Gorgens-Ekermans & Brand, 2012), and might have a positive impact at work, then EQ could explain the individual differences regarding coping with occupational stressors (Landa, Lopez-Zafra, Martos & Aguilar-Luzon, 2008).

According to previous surveys (Dusseldorp, Meijel & Derksen, 2010. Landa et al., 2008) emotional intelligence is noted to have a protective role against stress while positively influencing the health of nursing staff. Petrides and Sevdalis (2009) claimed that nurses' emotional coping, both personally and occupationally, and their ability to maintain a non-conflict communication and interaction inside a stressful workplace environment is a key issue to be scientifically as well as educationally examined further.

Current study

The aim of this study was to explore the relationships between burnout syndrome, occupational stressors, coping mechanisms and emotional intelligence in a sample of Greek hospital nurses in the greater area of Athens. In addition to these variables, the purpose of this study was also to investigate the demographic characteristics of the sample. Group differences among respondents working in general and oncology clinics and in the public and private sector were also investigated.

In line with previous research (e.g. Dusseldorp et al., 2010. Gorgens-Ekermans & Brand, 2012. Landa et al., 2008), the following assumptions were expected in the current study: Negative associations between emotional intelligence and emotional exhaustion and depersonalization as well as positive associations with personal accomplishment. Similarly, negative associations between emotional intelligence and vocational stressors among nursing staff were expected. Differences between nurses according to their demographic characteristics with respect to burnout syndrome might also be expected.

Method

Sample and data collection

The scales of the survey were self-reported, administered on paper, stapled together and handed-out individually for each participant during his/her work hours in the clinical units. Due to workload and the responsibilities of the nurses taking part in the research, and due to the nature of the profession (cyclic working hours / shifts), in most cases it took successive visits by the researcher to collect the completed forms. During the distribution of the forms, the researcher informed the participants about the importance of sincere and spontaneous answers. Instructions on completing the questionnaires were also provided.

Survey data were collected from 271 nurses including men and women, of differing educational levels and ages working in several hospitals in the greater area of Athens. The sample consisted of 184 nursing staff working in general/dermatological units and 87 nursing staff working in oncology clinics. 236 participants were employed in public hospitals and 35 were working in private hospitals. A total of 514 questionnaires were distributed and the final sample consisted of 271 volunteer respondents (valid response rate, 52,7%).

Measures

Data were collected using a self-reported questionnaire consisting of five (5) sections as follows: (1) Maslach Burnout Inventory (MBI), (2) Occupational Stressors Scale, (3) Occupational Stress Indicator (Coping Scale), (4) Trait Emotional Intelligence Questionnaire-Short Form and (5) Demographic Data.

(1) Burnout

The first scale was the Maslach Burnout Inventory (MBI) by Maslach and Jackson (1986), which consists of 22 items (Greek adaptation by A.-S. Antoniou). The MBI is a widely used instrument which measures the way in which care workers perceive their work and their patients (Antoniou, 2006). The items are divided into three dimensions: 1. Emotional exhaustion, 2. Depersonalization, 3. Personal accomplishment, ranked in a 7-point Likert scale (0=never to 6=every day). According to Antoniou (2007) this measure can also be used as a prognosis tool for the physical and psychological health of the participants and as a source of information used on intervention programs. The emotional exhaustion dimension is also considered the core element of this instrument (Shirom & Melamed, 2008).

(2) Occupational Stress Factors

The second instrument was the Occupational Stressors Scale aimed at investigating the perceived stress sources which take place in the occupational environment. This was developed by Antoniou (2002) and consists of 30 statements rated on a 5 point Likert scale ranging from 1 (*it does not causes me stress*) to 5 (*it causes much stress*).

Exploratory factor analysis was performed on this measurement in order to uncover its structure. According to the results, the scale consists of six factors which contributed to 60% of the total variance. These factors are as follows: workplace pressure, secondary tasks, emotional involvement, family responsibilities, workload, interpersonal relationships.

(3) Coping Strategies

The instrument used to investigate and measure nurses coping strategies was the Coping Scale Occupational Stress Indicator which is the final scale of the Occupational Stress Indicator (OSI) devised by Cooper, Sloan and Williams (1988) and adapted by Antoniou. This 28-item scale, measures the coping strategies which an individual uses to handle stressful situations. Participants rate the frequency of use of six different stress-coping strategies using a six-point Likert self-report scale ranging from 1 ("never used by me") to 6 ("extensively used by me"). The Coping Scale Occupational Stress Indicator's scale is broken down into the following six subscales: social support, task strategies, logic, home-work relationships, time, and involvement.

(4) Emotional Intelligence

The fourth instrument consisted of the Trait Emotional Intelligence Questionnaire - Short Form (TEIQUE-SF) which measures global trait emotional intelligence (trait EI), it consists of 30 statements and is based on the long form of the TEIQue (Cooper & Petrides, 2010. Petrides & Furnham, 2001). Participants rate the responses to each statement ranging from 1 ("Completely Disagree") to 7 ("Completely Agree"). The respondents' answers were originally calculated as a whole and afterwards according to the TEIQue-SF scoring key (London Psychometric Laboratory, 1998-2014), were divided into four sub-scales: wellbeing, self-control, emotionality, sociability.

(5) Personal and occupational demographics

The final part of the questionnaire consisted of demographic and occupational information and included questions in relation to gender, age, marital status, educational level, years in nursing, afternoon-and-nightshifts per month, quality of relationships with doctors and other health professionals. These findings were to be examined in relation to the dependent variables of the study.

Data analysis

This study followed a cross-sectional descriptive method. Data collection was performed by the administration of printed scales whose treatment was based on application of quantitative statistics. The data were analyzed using the Statistical Package for Social Sciences software (SPSS, version 21.0, IBM Corp.).

Multivariate Factor Analysis was applied using orthogonal rotation, in order to investigate the measurements internal structure and parameters (Mylonas, 2012). Reliability analysis was performed for all four scales using Cronbach α internal consistency coefficient. For the simple linear regression analysis workplace stressors, family status and age of participants were entered as independent variables and emotional exhaustion and depersonalization were entered as dependent variables. Intercorrelations among measurement instruments was performed using pearson correlational analysis. Relations between demographic data (such as gender, age, type of hospital, etc.) and the measurement were investigated by using t-test, ANOVA and MANOVA statistical analysis.

Results

Demographic and occupational characteristics of participants

The main demographic, educational, and occupational characteristics of the participants are presented in Table 4. The sample consisted of 184 and 87 nursing staff working in general/dermatological and oncology clinics respectively. 236 participants were employed in public hospitals and 35 were working in private hospitals. The majority of participants (244) were women (90.04%), and 27 were men (9.96%). Approximately half of the sample was aged between 36 years and 50 years

(56,1 %), 36.2% of the participants were aged between 20 years and 35 years, and 7.7% were aged 50 years or above.

Mean work experience in nursing was 15 (sd=9) years. The mean number of working night-afternoon-and weekend shifts was 3 (sd=4), 5 (sd=5) and 2 (sd=1) respectively. Most of the nurses were married (59.4%), 29.5% were single/unmarried, 5.9% were divorced and 4.7% were living with their partners.

Descriptive characteristics of the scales

Table 1 contains the descriptive characteristics and the Cronbach α internal reliability of the four measures of this research. According to Maslach and Jackson (1986) the three burnout dimensions are evaluated as follows: I. *emotional exhaustion:* high levels: more or equal than 27, moderate levels: 17-26, low levels: 0-16, II. *depersonalization:* high level: more or equal than 13, moderate levels: 7-12, low levels: 0-6, III. *personal accomplishment:* high levels: 0-31, moderate levels: 32-38, low levels: more or equal than 39. In the present study, the mean score of participants' emotional exhaustion was 25.9 (sd=12.2), indicating moderate to high levels of exhaustion and the mean scores of depersonalization and personal accomplishment subscales were moderate, scoring 8.6 (sd=6.7) and 36.1 (sd=7.5) respectively. Among all nursing participants (N=271), 48.3%, 32.8% and 24.7% scored high levels of emotional exhaustion, depersonalization and personal accomplishment respectively. High levels in all burnout dimensions were noted for 10% of the total sample.

Descriptive results of the occupational stressors, coping strategies and emotional intelligence are presented in Table 1. The mean scores of the stressors were presented in rank order. The ranked order of the most frequently perceived causes of work stress were as follows: 1. *secondary tasks* (M=29.3), 2. *workplace pressure* (M=23.8), 3. *family responsibilities* (M=13.8), 4. *interpersonal relationships* (M=13.0), 5. *workload* (M=12.0) and 6. *emotional involvement* (M=9.8). In order to identify the nurses' mechanisms of coping with stress in the workplace, these were presented by their mean scores in rank order as follows: *task strategies* (M=28.8), *involvement* (M=26.7), *social support* (M=18.4), *home and work relationships* (M=17.7), *time* (M=16.0), *logic* (M=13.2). Similarly, scores for global emotional intelligence and its subscales were ranked as follows: *wellbeing* (M=5.1), *emotionality* (M=4.9), *emotional intelligence* (total score (M=4.8), *self-control* (M=4.6) and *sociability* (M=4.4).

Table 1. Descriptive characteristics of the scales

Variable	Cronbach α	M	SD
Emotional exhaustion	.87	25.98	12.28
Depersonalization	.76	8.69	6.78
Personal accomplishment	.75	36.15	7.57
secondary tasks	.86	29.34	7.74
workplace pressure	.86	23.81	7.49
family responsibilities	.73	13.86	4.60
interpersonal relationships	.78	13.01	4.52
Workload	.67	12.09	3.53
emotional involvement	.74	9.80	3.05
task strategies	.43	28.85	4.38
Involvement	.58	26.70	4.40
social support	.44	18.45	3.08
home and work relationships	.45	17.77	3.62
Time	.26	16.06	2.90
Logic	.50	13.25	2.81
Wellbeing	.73	5.16	1.00
Emotionality	.42	4.91	.71
emotional intelligence (total score)	.83	4.86	.63
self-control	.50	4.62	.82
Sociability	.50	4.47	.80

Pearson intercorrelations among all study scales

Table 2 presents the intercorrelations between all four dependent variables. The findings suggest several significant correlations between the study scales. Positive correlations between occupational stress factors and the two dimensions of burnout syndrome, emotional exhaustion and depersonalization, and negative associations between occupational stress factors and personal accomplishment emerged as expected.

A negative relationship between burnout dimensions and emotional intelligence and a negative correlation between work stressors and emotional intelligence was demonstrated for the participants, also as expected. The first two burnout sub-scales were negatively correlated with the involvement strategy, which in turn was positively related with personal accomplishment. Finally, emotional intelligence (both as a total score as well as its dimensions separately) appears to present low but positive correlations with the coping strategies (statistically significant Pearson r values vary between 0.121 and 0.274). The above results indicate that the higher the emotional intelligence score, the more frequent the use of coping mechanisms or vice versa.

Means of measures and demographic characteristics of the sample

Presented below are the main findings of the study's instruments in relation to the demographic characteristics of the participants.

Table 2. Correlations among all study scales

	1.emotional exhaustion	2.depersonalization	3.personal accomplishment	4.workplace pressure	5.secondary tasks	6.emotional involvement	7.family responsibilities	8.workload	9.interpersonal relationships	10.social support	11.task strategies	12.logic	13.home and work relationships	14.time	15.involvement	16.Emotional intelligence-total	17.wellbeing	18.self-control	19.emotionality	20.Sociability
1.emotional exhaustion	1																			
2.depersonalization	.496**	1																		
3.personal accomplishment	-.186**	-.332**	1																	
4.workplace pressure	.521**	.317**	-.071	1																
5.secondary tasks	.627**	.304**	-.046	.711**	1															
6.emotional involvement	.325**	.120*	.002	.549**	.622**	1														
7.family responsibilities	.500**	.301**	-.029	.624**	.596**	.414**	1													
8.workload	.480**	.169**	-.122*	.609**	.634**	.531**	.554**	1												
9.interpersonal relationships	.455**	.382**	-.317**	.755**	.559**	.476**	.511**	.547**	1											
10.social support	-.127*	-.120*	.071	030	-.061	-.011	.035	-.056	-.011	1										
11.task strategies	-.096	-.103	.099	-.073	-.053	-.121*	-.002	-.051	-.065	.494**	1									
12.logic	-.043	.009	.089	-.122*	-.055	-.094	-.003	-.162**	-.159**	.349**	.511**	1								
13.home and work relationships	-.150*	-.091	.053	-.119	-.152*	-.157**	-.124*	-200**	-.183**	.389**	.448**	.304**	1							
14.time	-.096	-.046	.016	-.093	-.085	-.040	-.024	-.093	-.083	.368**	.565**	.443**	.308**	1						
15.involvement	-.237**	-.190**	.277**	-.181**	-.169**	-.071	-.040	-.125*	-.215**	.445**	.565**	.413**	.419**	.428**	1					
16.Emotional intelligence-total	-.378**	-.328**	.420**	-.320**	-.227**	-.170**	-.274**	-.378**	-.449**	.183**	.149*	.177**	.256**	.102	.274**	1				
17.Wellbeing	-.281**	-.214**	.348**	-.137*	-.093	-.048	-.166**	-.196**	-.257**	.112	.121*	.056	.253**	.071	.221**	.801**	1			
18.self-control	-.230**	-.254**	.294**	-.321**	-.207**	-.157**	-.283**	-.311**	-.414**	-.022	.027	.231**	.097	.043	.139*	.690**	.418**	1		
19.emotionality	-.243**	-.270**	.307**	-.208**	-.148*	-.030	-.150*	-.242**	-.294**	.259**	.114	.066	.172**	.044	.246**	.749**	.462**	.338**	1	
20.sociability	-.354**	-.227**	.293**	-.338**	-.240**	-.286**	-.272**	-.366**	-.438**	.156**	.152*	.190**	.193**	.126*	.194**	.761**	.462**	.452**	.486**	1

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Burnout syndrome

Depersonalization levels were significantly higher for participants working in the private sector compared with their colleagues who were employed in the public sector (p=0.00) (Table 3). No statistically significant differences were identified with regard to gender (p=0.69) or among nurses working in oncology units or dermatological/general units (p=0.94). Data analysis demonstrated that married (M=27.9, p=0.01) and older participants aged 36 to 50 years (p=0.00), presented significantly higher levels of emotional exhaustion as compared to other nursing staff. Furthermore, having children provided higher scores in the emotional exhaustion dimension (M=27.4), while not having children provided higher scores in the depersonalization dimension (M=9.6). With regard to years of experience as a nurse, respondents with 11-20 years of experience scored higher on levels of emotional exhaustion (M=28.2) and personal accomplishments (M=34,4) than participants with more or less years of vocational experience.

Regarding hospital shifts, statistically significant relationships were observed between nightshifts and the depersonalization dimension (r = 0.148, P=0.015<0.05) as well as with afternoon shifts and depersonalization (r = 0.124, P=0.042<0.05).

In addition, better quality of professional relations at the workplace was related to lower the levels of burnout. Hence higher scores in emotional intelligence were noted by nurses who reported very good relations with doctors and other health professionals (Table 5.).

Table 3. Demographic characteristics and burnout levels of participants

Variable	I. Emotional exhaustion					II. Depersonalization			III. Personal accomplishment		
	N	%	M	SD	Sig. (2-tailed)	M	SD	Sig. (2-tailed)	M	SD	Sig. (2-tailed)
Gender											
Males	27	10,0%	25,81	11,42		11,14	7,63		34,55	8,64	
Females	244	90,0%	26,00	12,39	,94	8,42	6,64	,21	36,32	7,44	,24
Type											
Oncology	87	32,1%	25,55	11,17		8,67	6,76		34,89	6,87	
General/dermatological	184	67,9%	26,18	12,79	,69	8,70	6,81	,97	36,74	7,82	,06
Category											
Public	236	87,1%	26,08	12,41		8,09	6,58		36,41	7,40	
Private	35	12,9%	25,28	11,46	,72	12,71	6,82	**,00**	34,34	8,55	,13
Age											
20-25	26	9,6%	17,88	9,09		8,69	6,61		38,88	6,62	
26-30	30	11,1%	21,23	11,38		9,56	6,85		36,40	8,04	
31-35	42	15,5%	25,21	11,70		9,69	7,36		34,50	6,71	
36-40	44	16,2%	30,02	11,20		9,90	6,60		35,38	7,92	
41-45	50	18,5%	28,12	13,61		8,06	7,20		35,42	8,29	
46-50	58	21,4%	27,96	12,08		7,62	6,45		36,36	7,34	
50=< years old	21	7,7%	25,28	11,98	**,00**	7,38	5,96	,48	38,47	7,21	,21
Marital status											
Married	161	59,4%	27,96	12,64		8,08	6,77		36,30	7,24	
Single	80	29,5%	23,11	10,85		9,40	6,46		36,33	7,93	
Divorced	16	5,9%	20,31	11,93		8,43	6,72		35,81	9,75	
Living together	13	4,8%	26,92	12,15		12,76	7,77		32,92	6,30	
Widower/widow	1	,4%	15,00	.	**,01**	1,00	.	,08	44,00	.	,46
Kids											
Not having kids	117	43,2%	23,99	11,89		9,68	6,81		35,62	7,58	
Having kids	154	56,8%	27,49	12,39	**,02**	7,94	6,68	**,03**	36,55	7,56	,31
years of nursing experience (M=15, sd=9)											
less than or equal to 10 years	94	34,7%	22,17	11,02		9,87	6,90		36,68	7,02	

11-20	83	30,6%	28,28	12,94		8,77	6,66		34,46	8,12	
21-30	85	31,4%	27,75	12,04		7,38	6,57		36,74	7,51	
greater than or equal to 31 years	9	3,3%	27,77	13,16	**0,00**	8,00	7,38	0,10	40,55	5,98	**0,04**

	I. Emotional exhaustion				II. Depersonalization		III. Personal accomplishment	
Number of shifts	Mean	Sd	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)	Pearson Correlation	Sig. (2-tailed)
Mean nightshifts per month	3,21	3,84	,01	,81	,14	**,01**	-,01	,85
mean afternoon shifts per month	4,58	4,51	,01	,80	,12	**,04**	,03	,59

Results significant at the 0.05 level (2-tailed) are presented in bold.

Occupational stressors and coping strategies

Female nurses reported significantly higher scores in stressors such as family responsibilities (p=0.04), workload (p=0.03) and emotional involvement (p=0.01). With regard to type of clinic, it was found that the participants in the general/dermatological clinics perceived more workplace pressure (p=0.02) and emotional involvement (p=0.03) than their colleagues working in oncology clinics. Concerning coping mechanisms, an interaction between age and marital status was identified, with single participants reporting higher levels of social support during their work life as a coping strategy, compared to their married colleagues (Table 4). Furthermore, nurses reporting good or very good relations with doctors had significantly higher scores in specific coping strategies such as the involvement strategy, coping with occupational stress by recognizing their limitations and making their work more interesting (Table 5).

Emotional intelligence

According to the results of the Two-Way MANOVA analysis (using gender and type of clinic as independent variables, and emotional intelligence factors as dependent variables) no statistically significant differences were found regarding the type of clinic factor, as oncology and general/dermatological staff scored similarly. Although there were no gender differences in the total emotional intelligence score, female nurses scored significantly higher on the emotionality subscale (P=0.010<0.05) and male on the self-control (P=0.003<0.05) (Table 4).

Descriptive characteristics demonstrate that male nurses score statistically higher levels (M=4.9) in the self-control dimension compared to female nurses (M=4.5), whilst the latter score statistically higher levels for the emotionality dimension (M=4.9) compared to the former (M=4.9) (Table 4).

With respect to the variable of the nurses' professional relationships, it was found that the better the quality of the relationships with the doctors and other health professionals the higher the mean scores in emotional intelligence (for both the total score I and all four dimensions) (Table 5).

Table 4. Occupational stressors, coping mechanisms and emotional intelligence scores in regard with the participants' sex and the hospital's type

		Gender					Type				
		Men		Women		Sig.	Oncology		General		Sig.
	Variable	M	Sd	M	Sd		M	Sd	M	Sd	
Stressors	workplace pressure	22,96	7,89	23,91	7,45	,23	22,25	7,01	24,55	7,61	**,02**
	emotional involvement	8,74	3,07	9,92	3,03	**,01**	9,27	3,10	10,05	3,00	**,03**
	family responsibilities	12,29	4,78	14,04	4,56	**,04**	13.18	4,99	14,19	4,38	,12
	Workload	10,74	3,77	12,24	3,48	**,03**	11,79	3,59	12,23	3,50	,32
Emotional Intelligence	Self-control	4,98	,90	4,58	,80	**,00**	5,42	,91	4,82	,86	,19
	Emotionality	4,61	,85	4,94	,68	**,01**	4,28	,78	4,73	,87	,09

Stress coping	Social support	Age	Marital status	M	Sd	**0,03**
			Single	18.52	2.33	
		20-25	Living together	17.00	3.60	
		26-30	Married	19.18	2.56	
			Single	19.43	3.07	
			Living together	18.66	1.52	
		31-35	Married	19.00	2.58	
			Single	18.56	2.82	
			Divorced	20.00	.	
			Living together	18.50	3.08	
		36-40	Married	17.58	2.97	
			Single	19.63	1.91	
			Divorced	12.33	5.85	
			Living together	18.00	.	
		41-45	Married	18.86	2.90	
			Single	19.33	2.54	
			Divorced	15.50	2.64	
		46-50	Married	17.88	3.28	
			Single	20.75	2.36	
			Divorced	20.12	2.41	
			Widower/widow	21.00	.	
		50=< years old	Married	17.65	4.31	
			Single	20.00	.	

Results significant at the 0.05 level (2-tailed) are presented in bold.

Table 5. Quality of relationships between doctors and other health professionals and the four questionnaires

	Relations with doctors							Relations with other health professionals						
	Very good (N=134, 49,4%)		Good (N=114, 42,1%)		indifferent (N=23, 8,5%)		Sig. (2-tailed)	Very good (N=149, 55%)		Good (N=112, 41,3%)		indifferent (N=9, 3,3%)		Sig. (2-tailed)
	M	Std.	M	Std.	M	Std.		M	Std.	M	Std.	M	Std.	
Emotional exhaustion	23,39	11,14	28,28	12,62	29,60	14,07	**0,00**	24,01	11,88	27,64	11,89	35,11	15,24	**,00**
Depersonalization	8,02	6,35	8,45	6,69	13,73	7,82	**0,00**	8,44	6,84	8,80	6,64	10,44	7,58	,44
Personal accomplishment	37,41	6,73	35,76	7,47	30,73	10,06	**0,00**	36,81	7,64	35,74	7,40	31,22	6,61	,07
family responsibilities	13,14	4,62	14,34	4,60	15,69	3,77	**0,01**	13,40	4,68	14,13	4,44	17,33	3,04	**,01**
interpersonal relationships	12,27	4,41	13,44	4,49	15,13	4,50	**0,00**	12,34	4,49	13,86	4,40	12,33	3,87	**,00**
emotional involvement	27,52	4,05	26,27	4,46	24,04	4,85	**0,00**	27,06	4,37	26,41	4,40	24,11	4,45	,17
Emotional intelligence (total score)	5,02	,63	4,73	,59	4,59	,64	**0,00**	4,97	,64	4,75	,59	4,48	,59	**,00**
Wellbeing	5,36	,97	4,96	,99	4,98	1,01	**0,00**	5,31	,98	5,02	,98	4,72	1,19	**,01**
Self-control	4,82	,80	4,43	,78	4,38	,85	**0,00**	4,74	,78	4,52	,82	3,88	,83	**,00**
Emotionality	5,01	,74	4,85	,65	4,57	,70	**0,01**	4,98	,75	4,83	,65	4,83	,50	,25
Sociability	4,62	,80	4,35	,80	4,28	,69	**0,01**	4,57	,83	4,38	,74	4,27	,82	,05

Results significant at the 0.05 level (2-tailed) are presented in bold.

Regression analysis

The six occupational stressors of this survey and the demographic variables of age and marital status were used as independent predictors of the dependent variant of the emotional exhaustion and the depersonalization in the simple linear regression analysis.

The results revealed significant positive relationships between burnout and stressors at work and all occupational stress factors were found to be significant predictors of emotional exhaustion and depersonalization dimensions of burnout.

Table 6 Linear regression analysis for predicting emotional exhaustion and depersonalization of the Greek nursing staff

Emotional exhaustion					Depersonalization				
	β	Std. Error	Beta	Sig		β	Std. Error	Beta	Sig
Variable	5,63	2,13		,00	Variable	1,84	1,30		,16
workplace pressure	,85	,08	,52	**,00**	workplace pressure	,28	,05	,31	**,00**
Variable	-3,18	2,28		,16	Variable	,87	1,54		,57
secondary tasks	,99	,07	,62	**,00**	secondary tasks	,26	,05	,30	**,00**
Variable	13,14	2,38		,00	Variable	6,07	1,38		,00
emotional involvement	1,30	,23	,32	**,00**	emotional involvement	,26	,13	,12	**,048**
Variable	7,49	2,05		,00	Variable	2,55	1,25		,042
family responsibilities	1,33	,14	,50	**,00**	family responsibilities	,44	,08	,30	**,00**
Variable	5,80	2,34		,01	Variable	4,78	1,45		,00
Workload	1,66	,18	,48	**,00**	workload	,32	,11	,16	**,00**
Variable	9,90	2,03		,00	Variable	1,24	1,16		,28
interpersonal relationships	1,23	,14	,45	**,00**	interpersonal relationships	,57	,08	,38	**,00**
Variable	19,93	1,86		,00	Variable	10,31	1,04		,00
Age	1,44	,41	,21	**,00**	Age	-,38	,23	-,10	,09
Variable	29,47	1,57		,00	Variable	7,22	,87		,00
Marital status	-2,22	,88	-,15	**,01**	Marital status	,93	,49	,11	,05

Results significant at the 0.05 level (2-tailed) are presented in bold.

Discussion

Nursing, as is the case with other health-care professions, is a an interesting field of study, since these professionals appear to be prone to burnout syndrome due to the unique stressors and conditions that they face on an everyday basis such as non-standard shifts, heavy workload, interpersonal relationships, facing human pain, disease and death etc. The aim of the current study was to investigate the relationship between burnout syndrome, the occupational stress factors, stress mechanisms and the emotional intelligence of a sample of Greek nurses in the greater area of Athens. Associations between those factors and demographic characteristics were also examined. A total of 514 questionnaires were distributed to hospital nurses and the response rate of the survey was 52.7% (271 volunteer respondents).

According to the main findings of the present research using the Maslach Burnout Inventory (MBI), the highest levels of the subscales emotional exhaustion, depersonalization and personal accomplishment were 48%, 32% and 25% respectively. A noteworthy 10% of the participants scored high levels in all the three subscales of the measurement.

Gender

Gender did not significantly affect burnout dimensions, a fact that verifies Maslach's (2003) assumptions, according to which both men and women experience burnout in roughly the same way. On the other hand these findings indicate that women present statistically significant higher mean scores in occupational stressors such as emotional involvement, family responsibilities and workload.

Concerning Petridis and Furnham's (2001) TEIQ-SF questionnaire, gender was not found to affect the emotional intelligence total scores; a finding that confirms the hypothesis that men and women have "strong" and "weak" traits but both are characterized by similar levels of that type of intelligence (Goleman, 1998). Although gender differences did not affect the total emotional intelligence score among participants, female nurses scored significantly higher on the emotionality subscale and men on the self-control one respectively. Similar findings arose in a 1997 Bar-On research, where men were found to be more confident and adjustable in stressful conditions in comparison with women (Bar-On, 2006).

Type of hospital

Nurses working in general/dermatological clinics seem to score higher than oncology nurses with regard to occupational stressors such as workplace pressure and emotional involvement. According to Antoniou (2007) oncology nurses treating cancer patients experience human pain and death on a daily basis. Under such circumstances the appearance of burnout syndrome seems to be more likely. On the other hand research in Greece by Papadatou, Anagnostopoulos and Monos (1994) some 20 years ago, showed that general clinic nurses had higher emotional exhaustion levels than those working in oncology clinics. The researchers attributed these findings to the resilience and more effective coping mechanisms which the oncology staff had developed. However, in the present study no significant differences on the burnout dimension was identified between the two types of clinic.

Category (private/public)

Regarding the category of the clinics, nurses employed in private clinics scored significantly higher depersonalization levels than their colleagues working in public clinics as expected. Shirom (Shirom, 2009. Shirom & Melamed, 2008) suggests that depersonalization is not a burnout dimension but a coping strategy against workplace stressors, which precedes the burnout syndrome. Thus, one can assume that due to increased depersonalization levels, private clinic nurses are at greater risk of presenting burnout syndrome than their public clinic colleagues.

Age

According to Maslach (2003) senior workers present lower levels of burnout syndrome than younger workers due to maturity and the coping mechanisms acquired over time. This assumption is partly confirmed in the current study, as nurses aged 50 years and above achieved average scores for emotional exhaustion levels, whilst their younger colleagues indicated high levels of emotional exhaustion. Younger nurses (20-35 years old) also score average levels for the above dimension.

Similar findings were observed in a sample of Greek doctors (Alexias, Anagnostopoulos, & Pilatis, 2010, where participants aged between 31-40 years and 41-50 years scored higher levels of emotional exhaustion than their older colleagues. Alexias et al. (2010) attribute these results to probable work and family fulfilled obligations of the senior doctors which contribute to less stress.

Years of experience

Statistically significant results were identified between years of nursing experience and burnout syndrome. More specifically, nurses with less than or equal to 10 years of experience scored the lowest emotional exhaustion levels (M=22.1) whilst their colleagues with 11-20 years of experience presented higher scores for this dimension. Furthermore the latter participants present lower levels of personal accomplishment (M=34.4) than their colleagues with 31 or more years of nursing experience (M=40.5).

Children

According to Maslach (2003) marital status is closely connected to burnout syndrome. Single people tend to experience higher degrees of burnout than married people and although having children is considered an additional sentimental burden which reinforces burnout, people who are married with children are less prone to the above syndrome. This fact is attributed to the assumption that married individuals are older and more mature and thus more experienced at dealing with interpersonal problems and emotional conflicts in their family environment.

However, the current study revealed higher levels of emotional exhaustion in married nurses followed by participants living together (upper medium to high levels), whilst single and divorced nurses scored medium levels for this factor. With regard to having children the findings indicate that nurses with children demonstrated statistically higher levels of emotional exhaustion, whilst childless nurses presented higher levels of depersonalization. The above findings lead to the assumption that participants aged 36

to 50 years, who are likely to be married with children are more at risk of emotional exhaustion. However simple linear regression analysis showed that marital status independent factor does not affect depersonalization at all while it hardly affects participants' emotional exhaustion (Table 6).

Other factors such as increased family obligations and higher financial demands rather than the family itself are probable stressors which emotionally exhaust individuals. Furthermore, other stressors should be taken into account; work and family conflict in health professionals (e.g. Montgomery et al., 2006), as well as important personal events e.g. child birth combined with workplace demands (Issari & Antoniou, 2014).

For nurses in particular, according to the literature there are various stress factors related to their special workplace conditions such as shift-work. Results from the current study revealed a significant positive relationship between the depersonalization dimension and evening/night shifts. These findings indicate that changing shifts is indeed a stress factor for nurses which increases depersonalization.

Relations

For the burnout scale, nurses reporting very good relations with doctors scored medium levels for all three of the burnout syndrome dimensions. On the contrary those reporting good relations have higher burnout scores while those with indifferent relations score high levels for all three dimensions. Similarly nurses reporting very good relations with other health professionals present medium levels of emotional exhaustion in contrast with the higher scores of their colleagues reporting good, indifferent or even bad relations.

Thus, according to the above, higher quality interpersonal relations in the workplace seem to provide a supporting network other than family and friends which offers cooperation and understanding leading to more efficient coping mechanisms and burnout prevention. The current findings confirm previous research (e.g. Locke, 2005. Rice, 2005. Tyler & Cushway, 1992. 1995) according to which social support and relationships, especially workplace relationships, has a beneficial effect on facing and coping with stress through factors like understanding, trust, being informed and increased self-efficacy (Bandura, 2001).

Relationships have similar effects regarding involvement coping mechanism. Specifically nurses reporting good or very good relationships with doctors presented higher means of involvement strategy than those reporting indifferent ones. According to these findings the former nurses seem to deal with stressors by staying busy and identifying their personal boundaries in comparison to their colleagues. The above applies to findings concerning emotional intelligence results as well; nurses having very good relationships with doctors and other health professionals score higher on emotional intelligence, in total and for all four subscales, compared with nurses reporting good or indifferent relations.

According to Goleman (1995. 1998) emotional intelligence is basically related to identifying and controlling the individual's emotions as well as recognizing others' emotional condition. This is achieved not only through personal skills (such as self-awareness and self-control) but also through social skills such as empathy. Particularly for health professionals, Dusseldorp et al. (2010) have stressed the importance of emotional intelligence in the development of key skills such as sensitivity, empathy, creativity, self-awareness, self-control and self-esteem.

All four scales intercorrelations

Through correlations between workplace stress factors and burnout scales it was revealed that all six stressors are positively related to both emotional exhaustion and depersonalization. The above intercorrelations indicate that the more the perceived stress the higher the emotional exhaustion and depersonalization and vise versa. These findings provide evidence of the importance of stress factors in the workplace which if constant and not dealt with effectively may lead to deterioration effects both personally and organizationally.

The findings indicate also that the higher the participants' emotional exhaustion and depersonalization the less the use of involvement strategy (through looking for ways to make the work more interesting, recognizing their own limits, etc.) as stress coping strategy and vice versa; the less the use of involvement the higher the exhaustion and depersonalization scores. On the other hand, higher scores in personal accomplishment increase the use of this strategy of the study sample.

Intercorrelations between burnout syndrome and emotional intelligence support the current study's assumptions regarding factors measured by those scales. Results confirm the negative relation between emotional intelligence (both as a total score and in the four subscales) and the two burnout dimensions; emotional exhaustion and depersonalization. In a similar way the positive relation between emotional intelligence (total and subscales) and personal accomplishment, was confirmed. The above results are similar to other surveys involving nurses, where higher emotional intelligence was linked to lower levels of burnout syndrome and stress (e.g. Gorgens-Ekermans & Brand, 2012. Landa et al., 2008. Montes-Berges & Augusto, 2007).

Regression analysis results

Simple linear regression analysis revealed that all stress factors and especially secondary tasks were significant predictors of the participants' emotional exhaustion. This means that the appearance of each of the above stressors is expected to raise the emotional exhaustion levels of the sample of Greek nurses. In the same way all stressors and interpersonal relations in particular predict participants' depersonalization. Those results confirm the assumption that workplace stressors being long term and unresolved may lead to burnout syndrome.

Conclusion

Leiter and Maslach (2007) consider burnout syndrome to be the greatest organizational hazard of the 21st century. Health care workers in particular seem prone to burnout syndrome due to the specific conditions and the stressful situations which they have to face on a daily basis. Workplace stressors such as heavy workload, family-work conflict and relations in the workplace have a significant effect on the appearance of burnout especially if they are not dealt with sufficiently. The above is confirmed by the current study's findings with Greek nurses, as stress factors such as secondary tasks, workplace pressure, family obligations and interpersonal relations positively affect burnout and could significantly attribute to the appearance of emotional exhaustion and depersonalization.

Furthermore, with regard to relationships, the quality of interpersonal relationships is twofold, meaning that relationships could represent either a stress factor or a stress coping mechanism in the work environment. The current results support the above assumptions, since among Greek nurses the better the quality of workplace relations with doctors and other health care professionals, the lower the burnout levels and also the higher the emotional intelligence. Emotional intelligence according to both this study's hypothesis and references through its traits such as empathy, adaptability, self-awareness and self-control of one's emotions lead an individual to creating and preserving healthy relationships while increasing the possibility of insuring his/her job.

Thus, reinforcing emotional intelligence in nursing staff may lead to improved interpersonal relations and more effective coping with the many stressors which may result from the current global as well as Greek socio-financial crisis and the constantly changing labor market. As a consequence dealing with those workplace stressors, the hazard of burnout syndrome appearance could be prevented.

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