



*Original Article*

## **Burnout in Nursing Personnel in a Regional University Hospital**

Eleni Moustaka<sup>1</sup>, Maria Malliarou<sup>2</sup>, Paul Sarafis<sup>3</sup>, Theodore Konstantinidis<sup>4</sup>, Zacharoula Manolidou<sup>5</sup>

General Military Hospital, Athens, Greece<sup>1</sup>, General Military Hospital, Alexandroupolis, Greece<sup>2</sup>, University of Peloponnese-Faculty of Human Movement and Quality of Life Sciences- Department of Nursing, Athens, Greece<sup>3</sup>, Democritus University of Thrace, Medical School, Alexandroupolis, Greece<sup>4</sup>, National Health Operations Center-Department of Operational and Strategic Planning, Greece<sup>5</sup>

**Abstract:** In this study we aimed to investigate the frequency of the burnout syndrome among the nursing personnel of all rungs. The present study is descriptive with synchronical comparisons and cross-correlations. The research was conducted in a Regional University Hospital. **Subjects:** The questionnaire was distributed to 150 RNs and NAs and the response rate was 42,6% (N=64). **Main outcome measure** is the determination of the burnout levels of nurses employed in a major Regional University hospital and the correlation of factors of burnout level with demographic and job related factors. **Results:** Generally occupational burnout appears to be in moderate levels. 9,37% of the sample experienced a high degree of burnout while 6,24% experienced low degree. 34,38% of the sample experienced low emotional exhaustion, 20,31% moderate and 45,31% high. 37,5% of the sample experienced low personal accomplishments, 28,13% moderate, 34,38% high. 26,54% of the sample experienced low depersonalization, 32,81% moderate, 40,63% high. Emotional exhaustion correlates significantly with working a rotation shift ( $p=0,05$ ). Emotional exhaustion correlates significantly with resignation from hospital ( $p=0,002$ ). Depersonalization correlates significantly with the multidisciplinary cooperation ( $p=0,05$ ). The factors of burnout were examined in combination with the qualitative characteristics, as sex, the marital status, the level of education, with  $\chi^2$  and in combination with the quantitative demographic characteristics as the age, the weight, the

height, the number of children; with ANOVA one way and it did not find to relate themselves considerably.

**Key Words:** Burnout, registered nurse, nurse assistant, regional hospital, Maslach burnout inventory.

Burnout is long-term reaction to occupational stress and appears mostly to those practicing social vocation [1]. Freudenberger first used the term burnout in 1974, saying that it is the feeling of the failure and exhaustion that can be observed in social workers [2]. The aetiology of burnout syndrome is multidimensional. Professionals that have frequent contact with individuals are more sensitive to develop burnout [3,4]. As their emotional resources are depleted, workers feel they are no longer able to give of themselves at a psychological level [5].

Burnout as a syndrome has three dimensions [6,7]:

- a) emotional exhaustion
- b) depersonalization
- c) lack of personal accomplishment

Emotional exhaustion refers to workers disability to offer emotionally to the recipients of their services. Emotional exhaustion results from decrease or loss of self-confidence and interest in one's profession as well as feelings of fatigue and weakness [8].

Depersonalization refers to the negative and cynical confrontation of recipients of their services. A typical example of such behavior is the inclination to refer to

patients not with their names but with the number of their bed /room, or the disease. The growth of this impersonal behaviour towards patients, their co-workers, and the organization makes the worker feel inadequate, ineffective, makes him fail to achieve his goals in the professional field. It is the point where feelings of low personal accomplishments start to appear, especially when work doesn't ensure positive feedback and remuneration [9].

Causes of professional burnout are many and factors that contribute in its appearance contain:

\* Trauma incidents at work such as bad prognosis of patients that they are responsible for [10]

\* Lack of satisfaction, lack of motives, role conflict [11]

\* Lack of support by co-workers, by managers [12,13]

\* Work load high expectations of patients and their families, excessive responsibility in work environment, working with unqualified and few personnel [8, 14]

\* Shift changes and long work hours [8]

The Socio-demographic factors which increase the possibility of burnout according several papers are high educational level, small previous experience, being single, and working many hours a week [15-17]. Socio-demographic factors such as age, job experience, marital status, having children, educational level or income, and job-related factors such as excessive work load, absence of job resources, lack of autonomy have been found related to burnout [18].

Burnout is related with psychosomatic symptoms such as sleep disorders, eating disorders, headaches, ulcer, loss of libido, but also with emotional symptoms such as hypersensitivity, cynicism, phobias, depression, apathy, or intellectual symptoms as weakness of concentration that leads the individual to negative forms of behavior (increased alcohol consumption and nicotine), disturbance in his personal relations but also in reduction of his productivity, his efficiency and in negative attitude towards work [2,5,19]. This negative attitude towards work results to bad labour relations, absenteeism, errors at work, low level of healthcare quality [18].

The present study aims to determine the burnout levels of registered nurses and nurses assistants employed in a Regional University hospital and the correlation of factors of burnout level with demographic and job related features.

## Materials and Methods

The present study was descriptive with synchronical comparisons and cross-correlations.

Tools of measurement: Two forms were used for data

collection in this research. A general information questionnaire, recorded the demographic (age, education, marital status) and professional features (professional status, weekly work hours, participation in professional activities) of the sample of the study. It was formulated by the investigators according to similar questionnaires found in Greek and international literature. The questionnaires were anonymous.

The second form used in this research is Maslach Burnout Inventory (MBI), developed originally by Maslach (1981). It is translated into Greek and its reliability was recalculated by Anagnostopoulos and Papadatou 1992 [7]. Maslach Burnout Inventory evaluates experienced burnout and has three subscales [9]. Emotional Exhaustion (EE) subscale includes nine articles. EE describes the feelings in the individual of being exhausted by his/her job. Depersonalization (DP) subscale includes five articles. This subscale defines the behaviour that hurts self-esteem and is without emotion, towards the individuals whom she gives care. Personal Accomplishments (PA) subscale has eight articles. This subscale defines the feelings of being able to cope with the problems an individual working directly with people is confronted with in the work environment [5]. High scores in EE and DP subscales and low scores in PA subscale indicate high levels of burnout. Moderate burnout corresponds to moderate scores in each subscale. Low scores in EE and DP subscales and high scores in PA subscale indicate that burnout is at a low level [5].

The MBI has 22 statements regarding different burnout dimensions, and each item has seven choices ranging from "never" (=0 point) to "every day" (=6 points). Participants rated the frequency of experiencing feelings related to each subscale using a 7-point scale with the verbal anchors: Never, A few times a year or less, Once a month or less, A few times a month, Once a week, A few times a week, and Every day, centred under the numerals 0 through 6. The inventory consists of three subscales measuring EE (range 0-48), D (range 0-30) and PA (range 0-42) separately [20].

The criteria for choosing the particular tool were that it is reliable, valid, while it has been used in a lot of countries and in various labour spaces [9]. The evaluation of Greek publication showed that "it is a short, structural valid and internally reliable body of recording of emotions of individual toward his work and his attitude toward those who they provide services, at least nursing" [7].

**Participants:** The questionnaire was distributed in 150 registered nurses and nurses assistants in Regional University Hospital at the duration of one

**Table 1:** Demographic information of nursing staff.

<b>Characteristics</b>	<b>n=64</b>
Mean age $\pm$ SD (year)	37,17 $\pm$ 7,38
Mean duration of nursing $\pm$ SD (year)	13,6 $\pm$ 8,9
<b>Gender</b>	
Male	6
Female	58
<b>Educational level</b>	
Technological Educational Institutions	39
2 years nursing school	25
<b>Marital status:</b>	
Married	43
Single or divorced	20
<b>Additional education</b>	
nursing specialization title	3
None	61
<b>Working role</b>	
Head nurse	11
Clinical registered nurse	30
Nurse assistant	23
<b>Working place in hospital</b>	
ICUs, emergency or operating rooms	35
Inpatient services	20
Outpatient clinics, laboratories or administrative units	9
<b>Working experience</b>	
1-5 years	20
6-15 years	14
>16years	30
<b>Shifts worked</b>	
Only days	16
Days and/or nights	48
Mean number of night shifts per person in a month	3,47 ( $\pm$ 2,75)

month (November 2006) and were returned 64 answered (response rate 42,6%). In table 1 is shown all the demographic information of nursing staff. 90,6% of the sample were women (?=58). 36% of the sample was nurses assistants, 55% were clinical nurses, and 9% were head nurses. Most nurses were married with 1-2 children and they had a work experience of up to 13,6 years (1 year minimum-30 years maximum) (SD 8,9 years). The majority of nurses (60,9%) were graduates of Technological Educational Institutions and 39,1% had 2 years of education in Nursing. None of the registered nurses possessed Masters Degree or Ph.D. and only 4,7% has a nursing specialization title. 15,6% of the sample worked in ICU, the double percentage in clinics with up to 40 bed capacity, while the 20,3% worked in surgery and

the 18,7% in ER, and the 14% in outpatient department. Concerning the work environment, 25% of the nurses in our sample were working only one shift (day shift) and 75% were working in a rotation shift. Only 2% had 4 night shifts a month, 31% up to 8 night shifts a month and 67% in our sample made more than 8, while the mean number of night shifts were 3,47 (SD 2,75). Nurses assistants were working mean 2,28 days in the weekend while registered nurses 2,82 days in the weekend. 43,8% of our sample had never changed working environment while 57,2% had changed working environment up to 5 times. The percentage of nurses that reported that their place in the particular department that worked constituted their personal choice was the 39,1%, while 60,9% it claimed that other decided for them. Only the 15,6% of sample answered that wants their child to follow the same profession and the 60,9% from them it would not choose again the same profession. 21,88% of the sample want to abandon the profession at an early date while the 34,38% in certain years. The 85,9 of the sample attributes the hindrance of achievement of interdisciplinary collaboration in the doctor - centred model of hospitals.

### Statistical analysis

The data analysis was realised with statistical methods of descriptive and inductive statistics. The level of statistical importance was fixed equal or smaller of 0,05. The statistical parcel of SPSS for Windows (version 15) was used. In the statistical analysis, the relation between all variables in part I and burnout scores were evaluated. One Way Variance Analysis (ANOVA) (F-test), Tukey Test, chi-square ( $\chi^2$ ), Significance of the Difference between Two Means Test (t-test), Kruskal Wallis were used in statistical analysis. In analysing the data, three statistical tests were employed: t-test to compare the means in two groups, and ANOVA to compare the means in multiple groups. ANOVA was preferred in order to make use of the post hoc techniques (Tukey, Scheffe) to determine the real differences between categories of the independent variable. Ethics: Approval to conduct the study was obtained from the Boards of Directors and the Nursing service Administration of the Hospital. The nurses were not able to complete the questionnaires on the same day because of work pressure. The agreement to complete the questionnaire was considered as consent to the participation in the study. Information was given orally on the inquiring team, the aim of study, the maintenance of anonymity and confidentiality of data, the voluntary attendance and the possibility of interruption any moment.

## Results

In the present study it was found that the 9,37% of the sample experiences high level of burnout and 6,24% of the sample low levels. The level emotional exhaustion has been seen low in 34,4%, and high 45,3% of the sample. The sample has 26,6% low depersonalization and 40,6% high. While low personal accomplishments has not been seen in the sample, and high PA are present in 71,9% of the sample (Table 2).

**Table 2:** Burnout Subscales

Subscales	mean	SD
EMOTIONAL EXHAUSTION	26,77	12,64
DEPERSONALIZATION	10,09	6,40
PERSONAL ACCOMPLISHMENTS	37,98	7,10

The factors of burnout were examined in combination with the qualitative characteristics, as sex, the marital status, the level of education, with  $\chi^2$  (Table 3) and in combination with the quantitative demographic characteristics as the age, the weight, the height, the number of children, with ANOVA one way and it did not find to relate themselves considerably. What found to relate itself considerably is the sense of personal accomplishments with the existence of children ( $p=0,01$ ). Explanation constitutes that the existence of children ensures positive feedback for the individual.

### Cross-correlation of burnout with professional factors

Qualitative and quantitative professional and other characteristics as independent variables such as years of previous experience, the type of schedule (shift,

**Table 3:** Correlation of 3 dimensions of burnout with social -demographic factors and working conditions variable Emotional exhaustion

variable	Emotional exhaustion				Depersonalization				Personal accomplishments			
	n	x	SD	p	N	x	SD	p	N	x	SD	p
<b>gender</b>			10,0		6	12,3	7,0		6	37,6	7,5	
men	6	248		NS				NS				NS
women	58	26,9	12,9		58	9,8	6,3		58	38,0	7,1	
<b>Marital status</b>												
married	43	28,0	12,5	NS	43	9,7	5,8	NS	43	38,2	6,3	NS
single/divorced	21	24,1	12,8		21	10,7	7,5		21	37,3	8,5	
<b>age</b>												
18-27	7	24,8	9,2		7	11,0	6,6	7	35,1	7,8		
28-35	20	26,4	12,9	NS	20	9,2	6,5	NS	20	37,3	6,8	NS
>36	37	27,3	13,2		37	10,4	6,4		37	38,8	7,1	
<b>Level of education</b>												
2 year school of nursing	25	26,0	13,6	NS	25	10,4	6,1	NS	25	39,0	6,8	
RN	39	27,2	12,1		31	9,8	6,6		31	37,3	7,2	
<b>Additional Education</b>												
Specialisation	13	19,6	13,4	NS	13,	6,1	4,54	<b>0,02</b>	13	38,0	5,9	NS
None	51	28,5	11,9		51	11,1	6,4		51	37,9	7,4	
<b>Working Role</b>												
Head Nurse	11	24,0	14,3		11	7,6	4,9		11	39,2	6,2	
Clinical RN	30	27,4	11,7	NS	30	10,4	7,03	NS	30	36,9	7,4	NS
Nurse Assistant	23	27,2	13,3		23	10,8	6,10		23	38,7	7,0	
<b>Schedule</b>												
Day Shift	13	24,6	12,4	<b>&lt;0,05</b>	13	10,3	6,46	NS	13	39,9	6,1	NS
Rotation Shift	51	27,2	12,7		51	10,0	6,4		51	37,4	7,2	
<b>Night Shift/Month</b>												
None	16	24,5	12,1		16	9,8	6,1		16	39,8	5,8	
Up to4	27	26,8	13,6	NS	27	10,0	6,7	NS	27	36,2	8,3	NS
Above5	21	28,3	11,9		21	10,2	6,7		21	38,8	5,9	
<b>Working Days In Weekend</b>												
None	13	22,6	11,3		13	10,3	6,5		13	40,3	6,3	
up to4	41	27,7	13,3	NS	41	10,5	6,9	NS	41	37,3	7,6	NS
5-8	10	28,1	10,9		10	8,0	3,3		10	37,6	5,2	
<b>Working experience</b>												
1-5	20	26,5	12,2		20	11,3	7,6		20	37,1	7,6	
6-15	14	28,9	11,9	NS	14	8,0	4,3	NS	17	38,7	6,1	NS
>16	30	25,9	13,4		30	10,2	6,2		30	38,2	7,3	
<b>Choice The Working Place</b>												
Mine	25	24,4	13,5	NS	25	9,3	6,1	NS	25	39,0	6,3	NS
Others	39	28,2	11,9		39	10,5	6,6		39	37,3	7,5	

NS: Non-significant

morning), the days of work at the weekend, the place of work, the additional education were correlated with 3 burnout dimensions. Performing chi-square test, additional education was found to correlate significantly with depersonalization ( $p=0,02$ ) (Table 3). Explanation constitutes that the growth of impersonal behaviour toward patients, collaborators and organisation is related considerably with the feeling of insufficiency, inefficiency, depreciation of oneself and failure of achievement of objectives in the professional sector. The 3 burnout dimensions were correlated with quantitative professional characteristics as the years of previous experience, the days of work in the weekend, the night services, with ANOVA one way test and it did not find to relate considerably. Performing chi-square test emotional exhaustion was found to correlate significantly with working in shifts

( $p<0,05$ ). Explanation constitutes that nursing personnel that is forced to work in shifts is forced to interrupt the biological 24-hour rhythm. The result of this disorganisation is the phenomenon of 'shift lag syndrome' that is characterized by feeling of tiredness and drowsiness and problems of insomnia, indigestion and by reduction of intellectual ability. In the longer-term, these disturbances of sleep can lead to permanent and serious complications of nervous system, as are chronic lassitude, change in the way the individual behave, permanent situation of stress and collapse, situations that require medical help [21]. Emotional exhaustion also influences the willingness of retirement from the particular hospital ( $p=0,002$ ). Depersonalization correlates significantly with hindrance of interdisciplinary collaboration because of the model of hospital that is centred to doctors. ( $p=0,05$ ) (Table 4).

**Table 4:** Correlation of burnout with work characteristics

Variable	Emotional exhaustion				Depersonalization				Personal accomplishments			
	n	x	SD	p	N	x	SD	p	N	x	SD	p
<b>Wish to abandon profession</b>												
Yes	19	29,8	11,8	NS	19	11,9	7,0	NS	19	37,2	6,2	NS
No	45	25,4	12,8		45	9,3	6,0		45	38,2	7,4	
<b>Wish to quit specific workinf environment</b>												
Yes	14	37,0	7,0	<b>,002</b>	14	13,0	6,7	NS	14	34,7	9,2	NS
No	50	23,8	12,3		50	9,2	6,1		50	38,9	6,1	
<b>Willingness Their Child to do nursing profession</b>												
Yes	10	27,2	12,9	NS	10	11,1	8,2	NS	10	40,1	6,9	NS
No	54	26,6	12,7		54	9,91	6,0		54	37,5	7,1	
<b>Choose Again the Same Profession</b>												
Yes	25	24,2	12,6	NS	25	8,7	5,7	NS	25	39,4	6,9	NS
No	39	28,4	12,5		39	10,9	6,6		39	37,0	7,1	
<b>Willingness to Modify Nurses Role</b>												
Yes	54	26,5	12,7	NS	54	10,1	6,03	NS	54	37,7	7,1	NS
No	10	27,9	12,8		10	9,7	8,5		10	39,5	7,1	
<b>sense of Being Equal Independent Health Professional</b>												
Yes	23	23,0	11,6	NS	23	8,0	5,4	NS	23	39,3	6,7	NS
No	41	28,8	12,8		41	11,2	6,6		41	37,2	7,2	
<b>Sense of Hindrance Collaboration Because of Doctor-Centered Model</b>												
Yes	55	27,6	12,6	NS	55	10,5	6,6	<b>0,05</b>	55	37,8	6,9	NS
No	9	21,2	11,8		9	7,4	3,3		9	39,9	8,3	
<b>Socially Valorised Profession</b>												
Yes	11	23,6	12,6	NS	11	7,7	6,7	NS	11	42,9	3,9	NS
No	53	27,4	12,6		53	10,5	6,2		53	36,9	7,2	
<b>Dimension of Professional Expectations/Reality</b>												
Yes	59	27,3	12,9	NS	59	10,3	6,5	NS	59	37,9	7,1	NS
No	5	20,0	4,0		5	7,0	3,8		5	38,8	7,8	

NS: Non-significant

## Discussion

In the present study it was found that burnout of registered nurses and nurses assistants was oscillated in mediocre levels. This discovery is also strengthened by previous researches that were made in General Greek hospitals [22-24].

As it was expected, taking into consideration the results of other researches the emotional exhaustion influences the willingness of nurses to retire. Individuals experiencing emotional exhaustion want to abandon their working facility. Depersonalization correlates significantly with hindrance of interdisciplinary collaboration, something that shows that indifference and impersonal confrontation of patients is related considerably with the hindrance of interdisciplinary collaboration [25].

The decreased sense of personal accomplishments leads to feelings of decreased social award of nursing profession. Important element constitutes also that the nurses feel that exists dimension of their professional expectations with the reality in percentage 92,2%. It is important to be pointed out that the nurse feels that makes a socially valorised profession as long as she/he feels that constitutes an equivalent member of sanitary team and a simultaneously and independent health professional. It is known that Greek Hospital are doctor-centered something that increases the hindrance of interdisciplinary collaboration. A big percentage of sample (84,4%) wishes the modification of their role in the professional health team], while the 89,9% of RN would want the modification of their with actions that he/she will be responsible for as an independent health professional, while only 35,9% of the sample feels professionally equal with other health professionals.

The early recognition of burnout syndrome as a result of extended stress and disappointment will contribute to the growth of professionalism, to the change of organisational structures in the working environment and finally to healthcare quality in the provided services. It has been found that the least exhausted individual has confidence in his faculties and is able to handle the problems that emerge [26,27]. Active effort of resolution of problems was found to relate with low levels of burnout [28,29]. Certain techniques of confrontation of the problem are the maintenance of balanced life, the attendance in teams of psychological support in order to share the emotions and the experiences [30]. The individual should place realistic objectives, learn to manage stress, to understand his limits. The learning of techniques of relaxation and management of time, the programs of physical exercise, as well as the techniques of consolidation of

social contacts and support have been proposed extensively in the world bibliography for dealing with burnout.

The problem however does not only influence the individual but also entire the organisation and should be evaluated proportionally from the administration in order appropriate measures are taken. The organisations should educate their personnel to handle the crises and should also undertake initiatives for the minimisation of professional stress. More specifically it is proposed [31]:

- a) The placement of suitable professional in the suitable place increases his probabilities of output but also benefit of qualitative care
- b) The clarification of professionals' role and duties and their inclusion in the decision-making.
- c) The possibility of breaks and special authorisations given by administration
- d) The increase of possibilities for professional development.
- e) The operation of teams for psychological support
- f) The given possibility of continuing training and education
- g) The interdisciplinary collaboration between the members of healthcare team (doctors, nurses, psychologists, psychiatrists, social workers) which presupposes the recognition of role, duties, but also limits of each expert and his contribution in the comprehension of approach and handling of each case.

The methods of prevention and confrontation of burnout concern the better planning of hospital spaces and other spaces of health, the enrichment of work, the inclusion of nurses in decision-making, the clarification of roles and duties of doctors and nurses, the opportunity given for continuing training and education, as well as the organisation of advisory teams for workers that face problems [32].

## Conclusion

In conclusion level of burnout in the nursing personnel of a Regional University Hospital oscillated in mediocre levels. It presents emotional exhaustion, which is related with the shifts, depersonalization which is related with the hindrance of interdisciplinary collaboration and finally both of them influence the decision to abandon the specific working environment. Finally, the decreased sense of personal accomplishments leads to feelings of decreased social award of the nursing profession.

## References

1. Gabassi P.G, Cervai S, Rozbowski P, Semeraro A,

- Gregori D. Burnout syndrome in the helping professions. *Psychol Rep* 90(1):309-14, 2002.
2. Freudenberger H.J. Staff burnout. *Journal of Social Issues* 30(1):159-165, 1974.
  3. Cordes C, Dougherty T. A review and integration of research on job burnout. *Academy of Management Review* 18:621-656, 1993.
  4. Vegchel N, Jonge J, Soderfeldt M, Dormann C, Schaufeli W. Quantitative versus emotional demands among Swedish human service employees: Moderating effects of job control and social support. *International Journal of Stress Management* 11(1):21-40, 2004.
  5. Maslach C, Jackson S.E. The measurement of experienced burnout. *J Occup Behav* 2:99-113, 1981.
  6. Maslach C, Jackson S.E. Burnout in organizational settings. *Applied Social Psychology Annual* 5:133-153, 1984.
  7. Anagnostopoulos F, Papadatou D. Productive synthesis and internal cohesion of questionnaire of recording burnout in sample of nurses. *Psychological Subjects* 5(3):183-202, 1992.
  8. Demir A, Ulusoy M, Ulusoy M.F. Investigation of factors influencing burnout levels in the professional and private lives of nurses. *International Journal of Nursing Studies* 40(8): 807-827, 2003.
  9. Maslach C, Jackson, S.E. *Maslach Burnout Inventory manual (2nd edn)*. Palo Alto, California, Consulting Psychologists Press, 1986.
  10. Van der Ploeg E, Dorresteijn S, Kleber R. Critical incidents and chronic stressors at work: Their impact on forensic doctors. *Journal of Occupational Health Psychology* 8(2):157-166, 2003.
  11. Posig M, Kickul J. Extending our understanding of human burnout: Test of an integrated model in no service occupations. *Journal of Occupational Health Psychology* 8(1):3-19, 2003.
  12. Brown C, O'Brien K. Understanding stress and burnout in shelter workers. *Professional Psychology: Research & Practice* 29(4):383-385, 1998.
  13. Westman M, Etzion D. The crossover of strain from school principals to teachers and vice versa. *Journal of Occupational Health Psychology* 4(3):269-278, 1999.
  14. Bakker A, Demerouti E, Taris T, Schaufeli W, Schreurs P. A multigroup analysis of the job demands-resources model in four home care organizations. *International Journal of Stress Management* 10(1):16-38, 2003.
  15. Gabbe S.G, Melville J, Mandel L, Walker E. Burnout in chairs of obstetrics and gynecology. *Am J Obstet Gynecol* 186:601-612, 2002.
  16. Chopra S, Sotile M, Sotile W. Physician Burnout. *JAMA* 291(5):633, 2004.
  17. Adali ?. Comparative study of burnout of nurses in pathological departments, ICU and Emergency. Doctoral thesis National Kapodistrian University of Athens Faculty of Nursing, Athens 1999.
  18. Maslach C, Schaufeli W.B, Leiter M.P. *Job Burnout*. *Annual Review of Psychology* 52:397-422, 2001.
  19. Demerouti ?. Burnout: definition and its relation with the labour conditions in various professional sectors. In: Basilaki E, Triliba S, Bezevegis E. *Stress, anxiety and their confrontation*. Athens, Ellinika Grammata, 2001.
  20. Maslach C, Jackson S.E, Leiter P.M. *Maslach Burnout Inventory manual (3d edn)*. : Palo Alto, California, Consulting Psychologists Press, 1996.
  21. Korompeli A. Why ICUs are stressful. Abstracts of 2nd Scientific Conference Urgent and Intensive Nursing, Volos 2004.
  22. Adali E, Priami M, Euaggelou E, Ifanti M, Mougia B. Burnout and working environment of psychiatric nursing personnel. *Nosileftiki* 41:105-114, 2002.
  23. Asimakopoulou M. Burnout, professional satisfaction and the engagement in work in Social Sector. Final work University of Patras Department of Administration of Enterprises, Patras 2004.
  24. Kandri T, Kalemis G, Moschos N. Phenomenon of "burnout syndrome" in doctor and nursing personnel in Trauma Unit in General Hospital of Nikaia. *Nosileftiki* 1:116-125, 2004.
  25. Quzouni C. Exploratory study of factors that cause stress in the nursing personnel of psychiatric units of short hospitalisation. *Nosikeftiki* 44(3):355-363, 2005.
  26. Elliot T, Shewchuk R, Hagglund K, Rybarczyk B. Occupational burnout tolerance for stress, and coping among nurses in rehabilitation units. *Rehabilitation Psychology* 41(4):267-284, 1996.
  27. Kantas A. *Organisational - Industrial Psychology*. Athens, Ellinika Grammata, 1995.
  28. Maslach C. *Burnout. The cost of caring*. New Jersey, Prentice-Hall Inc, 1982.
  29. Armstrong-Stassen M. The influence of prior commitment on the reactions of layoff survivors to organizational downsizing. *Journal of Occupational Health Psychology* 9(1): 46-60, 2004.
  30. Anagnostopoulos F, Staurou S. Burnout of NCAA personnel and satisfaction of patients. *Epiteorisi Igias* 97(16):11-26, 2005.
  31. Konstandinidis T.K, Moustaka H, Malliarou M. Professional Stress, burnout syndrome in hygiene and safety of work. Program of Postgraduate Study Hygiene and Safety of Work, University of Thrace, Alexandroupolis, Greece 2006.
  32. Papadatou D, Anagnostopoulos F, Monos D. Factors contributing to the development of burnout in oncology nursing. *British Journal of Medical Psychology* 67:187-199, 1994.