

# Burnout in doctors and nurses working in neonatal and pediatric intensive care units in a General Hospital.

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**ABSTRACT:** *Aim:* Health professionals working in intensive care units (ICU) are at high risk of developing the syndrome of professional burnout. The aim of the study was to explore the severity of professional burnout in doctors and nurses of neonatal (NICU) and pediatric ICUs (PICU) while identifying the factors associated with it.

*Study population and methods:* Anonymous questionnaires were distributed to the nurses and doctors working in a NICU and PICU of a General Hospital. We utilized a 22-item questionnaire, the Maslach Burnout Inventory that evaluates three domains of burnout; emotional exhaustion (EE), depersonalization (DP), and personal accomplishment (PA).

*Results:* The response rate was 58% (52/90). The average (SD) scores were 30.71 (11.5) for EE, 10.11 (5.9) for DP, and 33.37 (8.0) for PA. DP scores were significant higher in PICU than NICU ( $p = 0.032$ ) and EE and DP scores were higher in nurses than doctors ( $p < 0.013$  and  $p < 0.0001$  for EE and DP, respectively). Employees who reported health issues had a significantly higher degree of EE ( $p = 0.044$ ) and appeared less satisfied with their PA ( $p = 0.046$ ). Multiple regression analysis confirmed that ICU type and professional capacity were independent predictors of burnout. The age, marital status and years of ICU work did not significantly affect the burnout severity.

*Conclusions:* There is a significant degree of burnout in the personnel of Greek PICUs and NICUs which is affected by the professional status, type of ICU, and health issues of the employees involved. The state must implement the necessary interventions that will effectively minimize burnout in ICU personnel in order to prevent the unfavorable consequences on both staff members and inpatients.

*Key Words:* Emotional exhaustion, Depersonalization, Personal accomplishments, Psychological fatigue, Working environment.

## INTRODUCTION

The term burnout refers to the physical stress and, more importantly, the mental draining of all personal and emotional resources the employees suffer in their attempt to keep up with a highly demanding working environment<sup>1</sup>. Burnout originates from both personality and working environment characteristics. As regards the latter, burnout is the result of the discrepancy between the innate abilities of the individual and the workload that he/she is expected to complete. It reflects a long term imbalance where the individual is overwhelmed by the huge and demanding workload when at the same time he gets very limited satisfaction in return for his/her effort<sup>1</sup>.

Burnout has a particularly important role in the healthcare providers who undergo significant psychological, emotional and physical stress<sup>2</sup>. Published studies so far have focused primarily on the nursing staff<sup>3-7</sup>. However, intensive care unit (ICU) doctors are greatly exposed to stress as well, since they have to deal with life or death situations on a regular basis<sup>8-10</sup>. In general, there is a globally rising interest for the sociopsychological aspect of the working environment of health workers because this particular group of employees runs the risk of manifesting any of the three components that comprise the burnout syndrome; emotional exhaustion (EE), depersonalization (DP) and feelings of low personal accomplishment

(PA). EE is defined as the feeling of psychological fatigue which is characterized by the lack of energy on the individual's behalf to invest in his/her work combined with a perceived impression that all his/her emotional reserve is depleted. It can present with feelings of tension or disappointment. DP refers to the situation where the professionals are detached from the recipients of their services to such an extent that they treat their patients like objects rather than real human beings while demonstrating cynic behavior. The term personal accomplishment refers to the feeling of competence and achievements in employee's work with people<sup>1</sup>.

The prevalence of burnout in healthcare providers varies widely across specialties, being more often and severe in intensive care workers, both doctors and nurses. To our knowledge there are very few publications on burnout in workers in the Greek health system with most of them focusing specifically on the nursing staff<sup>11-13</sup>. So far there is no data regarding the severity of burnout in doctors and nurses working in PICUs and NICUs, who suffer even greater stress due to young age of their patients. The aim of this study was to explore the severity of burnout among nurses and doctors that work in NICUs and PICU of a Greek general hospital and identify the characteristics that render personnel susceptible to the development of burnout.

### SUBJECTS AND METHODS

Anonymous questionnaires were distributed to medical and nursing staff members of the NICUs and PICU of Hippokratia General Hospital of Thessaloniki. We used the Maslach Burnout Inventory (MBI) which is a 22-item questionnaire that has been found to be reproducible and valid<sup>1</sup>. The MBI evaluates three domains of burnout<sup>1</sup>; the EE subscale (nine items), the DP subscale (five items), and the PA subscale (eight items)<sup>1</sup>. The responders indicate their feelings on a seven-point scale. Scores greater than 27 and 10 in the subscales of EE and DP, respectively, are indicative of high EE and DP, whereas scores lower than 33 in PA indicate intense feelings of low PA, which as a whole reveal significant burnout<sup>8</sup>. The questionnaires were distributed during the working hours of the personnel by the same researcher who had the dual capacity of an ICU nurse and a psychologist. The staff was

provided with details regarding the study aim and the questionnaire layout and verbal consent was obtained from each participant.

### STATISTICAL ANALYSIS

Quantitative variables were normally distributed (Kolmogorov-Smirnov test) and expressed as means and standard deviations. Comparisons were performed using linear regression analysis. Stepwise multiple regression analysis was used for assessing the risk factors that were independently associated with burnout after adjusting for possible confounders. The level of statistical significance was determined at  $p < 0.05$ . Statistical analysis was performed with the use of SPSS software for Windows (version 16.0 LEAD Technologies, Inc).

### RESULTS

Out of the 90 NICU/PICU workers that were surveyed 52 (58%) returned the completed BMI questionnaires. Forty-nine respondents were female (94.2%). Of the responders, 3 (5.8%) aged less than 30 years, 22 (42.3%) aged between 30 and 40 years, 21 (40.3%) aged between 40 and 50, and 6 (11.5%) aged over 50 years. Their intensive care working experience ranged between 2 and 29 years with an average of 14.5 years. Sixteen responders reported health issues (30.8%). Regarding their marital status, 12 (23.1%) were single, 33 (63.5%) were married, and 6 (11.5%) were either divorced or widowed. The mean score values and standard deviations in each of the MBI domains are summarized in Table 1. The obtained scores demonstrated a high degree of EE and DP and intense feeling of low PA.

Members of the PICU staff had scores indicative of severe burnout on all three domains of the MBI whereas the NICU staff members scored within the limit of severe burnout only in the EE domain. The PICU staff members compared to the NICU staff had higher scores in the EE and DP domains and lower in the PA one. The differences were significant only for DP ( $p = 0.032$ , Table 1).

Nurses showed EE and DP scores higher and PA score lower than the limits of severe burnout. On the other hand, doctors demonstrated moderate degree of burnout, scoring significantly lower in the EE and DP subscale ( $p = 0.013$  and  $p < 0.0001$ , respectively)

**Table 1.** Mean (SD) scores in the 3 domains of Maslach Burnout Inventory (MBI).

	N	Emotional exhaustion	Depersonalization	Personal accomplishments
TOTAL	52	30.71 (11.5)	10.11 (5.9)	33.37 (8.0)
NICU	38	29.0 (11.6)	9.1 (5.7)	34.4 (7.5)
PICU	14	35.4 (10.1)	13.0 (5.9)	30.6 (9.0)
p (95% CI)		0.07 (-13.5 to 0.61)	0.032 (-7.5 to -0.35)	0.14 (-1.24 to 8.69)
Nurse	36	33.3 (11.0)	12.0 (5.8)	32.0 (8.4)
Doctor	16	24.9 (10.7)	5.9 (3.7)	36.4 (6.4)
p (95% CI)		0.013 (-15 to -1.8)	<0.0001 (-9.2 to 2.8)	0.065 (-0.28 to 9.15)
Without health problems	36	28.6 (10.6)	9.9 (5.6)	34.8 (6.2)
With health problems	16	35.5 (12.3)	10.7 (6.8)	30.1 (10.6)
p (95% CI)		0.044 (0.18 to 13.7)	0.65 (-2.79 to 4.44)	0.046 (-9.46 to -0.08)
Age <30 years	3	30.7 (7.0)	13.0 (3.5)	34 (5.5)
Age 30-40 years	22	29.6 (11.2)	10.3 (6.5)	33.4 (7.1)
Age 40-50 years	21	34.1 (12.4)	11.4 (5.1)	31.9 (8.8)
Age >50 years	6	23.0 (8.2)	3.7 (3.3)	38.2 (9.4)
p (95% CI)		0.74 (-4.9 to 3.5)	0.70 (-4.0 to 0.17)	0.61 (-2.17 to 3.68)
Single	12	27.3 (10.7)	9.2 (6.4)	34.2 (6.3)
Married	34	32.2 (11.8)	10.9 (5.8)	32.9 (8.0)
Divorced/widow	6	29.2 (11.5)	7.8 (6.1)	33.7 (11.9)
p (95% CI)		0.52 (-3.8 to 7.4)	0.93 (-3.03 to 2.76)	0.75 (-4.53 to 3.28)

*NICU, neonatal intensive care unit; PICU, pediatric intensive care unit.*

when compared to the nursing staff (Table 1).

Employees that reported health issues had higher scores in the EE and lower in the PA subscales ( $p = 0.044$  and  $p = 0.046$ , respectively) compared to those without health problems.

The age, marital status, and duration of ICU working did not have any significant effect on the severity of burnout, which however tended lower in employees aged more than 50 years (Table 1). Stepwise multiple regression analysis revealed that the professional capacity (doctor or nurse), the kind of ICU, and the presence of health issues were independent risk factors associated with the severity of burnout after adjusting for other confounders (Table 2).

## DISCUSSION

Findings of this study showed that the staff working in the NICU or PICU of a Greek general hospital demonstrates a high level of burnout which is more pronounced in the PICU than in the NICU, in nurses compared to doctors, and in employees with health conditions.

The working environment (hospital or private practice), the type of inpatients and the type of ICU are factors that can influence the development of burnout<sup>14-16</sup>. In our study the type of ICU in which the employees were involved emerged as a significant factor associated with burnout. PICU employees presented with a higher degree of burnout, especially in

**Table 2.** Independent factors that were significantly associated with the severity of burnout after adjusting for potential confounders [p (95 % CI), stepwise multiple regression analysis].

	Emotional exhaustion	Depersonalization	Personal accomplishments
Capacity (doctor/nurse)	0.034 (-15.8 to -0.67)	0.008 (-9.5 to -1.5)	
Type of ICU (NICU/ PICU)	0.009 (-13.1 to -1.9)	0.010 (-7.1 to -1.0)	
Health issues			0.005 (-11.4 to -2.1)

ICU, Intensive care unit; NICU, neonatal intensive care unit; PICU, pediatric intensive care unit.

the DP domain. No doubt that a suffering child can trigger stronger emotions than an adult or a neonate. Thus, contrary to other ICUs, in PICUs the emotional expression of the child attracts the staff's empathy and increases the level of EE among the staff members. Moreover, the higher level of DP in the PICUs can be attributed to the fact that emotional bondage with little children is easier even when they are intubated as they maintain the elements of eye contact and the facial expression that calls for help. Thus, health professionals keep a distance trying to protect themselves.

Several studies have revealed that the professional's capacity can influence the degree of burnout<sup>8,15,17,18</sup>. It has been reported that intensive care nurses develop EE and DP to a lesser degree and feelings of low PA to a higher or similar degree when compared to the doctors<sup>17</sup>. In our study, however, nurses presented with higher degree of EE and DP than doctors while the level of PA tended lower in nurses. In other words, nurses presented with more severe burnout than doctors. The discrepancy in our results compared to ICUs in other countries may be due to the understaffing of our units which is more obvious among nurses than doctors. It should be noted though that our findings are in agreement with those of other studies in the sense that individuals who were higher in the professional hierarchy or had higher education suffered less from burnout which is also a common conclusion in studies from other countries<sup>14,18,19-22</sup>. The burnout rate in the ICU nursing staff varies widely among different studies ranging between 21% and 46% for EE, between 6.6% and 18% for DP, and between 25% and 56% for the feeling of low PA<sup>16</sup>. Moreover, many studies reported that nurses run a very high risk of suffering from psychiatric disorders<sup>14,17,23,24</sup>. Besides, burnout is

one of the major causes that drive nurses to quit their jobs.

Although previous studies showed that the age may have an important role in the development of burnout we did not find any significant association between the severity of burnout and the age of ICU staff<sup>8,4,8</sup>. However, individuals older than 50 years of age tended to be less affected when compared with the rest age groups. It seems that younger employees struggle more to come to terms with the working conditions of an ICU and their initial hopes are soon defeated. It is also possible that younger employees may have little children of their own that consume a lot of their time and energy bringing them closer to the verge of manifesting signs of professional burnout. Among the other possible predisposing factors, the marital status and the duration of work in the ICU did not significantly affect the degree of burnout. Similar results were reported by Pico et al<sup>14</sup> whereas other studies found that burnout correlates to the marital status and the duration of employment in an ICU<sup>8,18</sup>.

Another key factor that can contribute to the emergence of burnout is the presence of health issues that may preexist or can be attributed to the demanding working conditions in ICUs. In any case, health issues make it even harder for the employees to cope with the excessive workload in ICUs. The net result is that many employees with health issues get more exhausted and develop burnout<sup>17</sup>. It should be noted though that in our study these individuals did not manifest a greater degree of DP.

Sex related differences in burnout have been found in studies from other countries that reported higher MBI scores in females<sup>8</sup>. In our study, the effect of sex on burnout was not analyzed because the NICU/PICU

stuff was almost exclusively females (94%).

Wide variations in the prevalence and severity of burnout in healthcare providers have been reported across countries. The severity of burnout in our study population was higher compared with data from critical care workers in other countries. More specifically, comparing each burnout domain separately, our study population showed a higher degree of EE and DP and a similar degree of PA compared to that in critical care workers in other countries<sup>8,9,14,15</sup>. The differences among countries could be attributed to the different working conditions and salaries<sup>8,16,18</sup>. Many work-related factors that add to the problem mainly affect the nurses. Some of them are the excessive ICU work load, organizational factors, night shift, low salary, quality of relationships with co-workers, interpersonal conflicts in the working environment as well as inability to step higher on the hierarchy which is accompanied by social prestige<sup>3,5,11,13,16,18,20,23,25-28</sup>.

The severe burnout of many ICU health workers, as it is clearly depicted in our study, may have serious consequences not only for the individual but also for his/her family and interpersonal relationships<sup>14,24</sup>. Previous studies reported that burnout is a leading factor associated with the development of psychological and physical health problems including low self-esteem, depression, insomnia, headaches, fatigue, or gastrointestinal and musculoskeletal complaints<sup>2,3,10</sup>. In addition, severe burnout is associated with poor quality of private life, lower effectiveness of ICU staff at work, decreased job satisfaction and intention to leave their job<sup>3,4,14,19-22,26</sup>.

Results of our study highlight the need for early intervention in order to avoid the serious consequences of burnout not only for the affected individual but for the patients as well<sup>4,26,29</sup>. Thus, predicting and preventing burnout in ICU workers should be a priority. The most effective strategy to deal with these issues is to implement a balanced combination of interventions at personal level as well as in the working environment. Restricting work hours, increasing the staff number, improving communication, and managing conflicts are essential to prevent burnout. For doctors, promoting their autonomy and providing adequate office resources and support staff could contribute to their well being<sup>30</sup>. For nurses, important factors that could minimize burnout are more support and appreciation from senior staff<sup>6</sup>. Our country definitely needs to reform the health care system. As part of this reform special attention should be paid in improving the work conditions and psychosocial environment in the work areas.

## Επαγγελματική εξουθένωση σε γιατρούς και νοσηλεύτριες νεογνικών και παιδιατρικών μονάδων εντατικής νοσηλείας Γενικού Νοσοκομείου.

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*Α' Νεογνολογική Κλινική και Εντατική Νοσηλεία Νεογνών του Α.Π.Θ., Ιπποκράτειο Γενικό Νοσοκομείο, Θεσσαλονίκης*

**ΠΕΡΙΛΗΨΗ:** *Εισαγωγή - σκοπός:* Οι επαγγελματίες υγείας που εργάζονται σε μονάδες εντατικής νοσηλείας βρίσκονται σε αυξημένο κίνδυνο να παρουσιάσουν επαγγελματική εξουθένωση (ΕΕ). Σκοπός της μελέτης ήταν να διερευνηθεί η σοβαρότητα της ΕΕ στο ιατρικό και νοσηλευτικό προσωπικό νεογνολογικών (MENN) και παιδιατρικής μονάδας εντατικής νοσηλείας (ΠΜΕΘ) γενικού νοσοκομείου και τους παράγοντες που την επηρεάζουν.

*Πληθυσμός μελέτης και μέθοδοι:* Ανώνυμα ερωτηματολόγια διανεμήθηκαν στους γιατρούς και νοσηλεύτριες που εργάζονται σε MENN και ΠΜΕΘ Γενικού Νοσοκομείου. Χρησιμοποιήθηκε το ερωτηματολόγιο Maslach Burnout Inventory που περιέχει 22 ερωτήσεις και αξιολογεί 3 παραμέτρους της ΕΕ: τη συναισθηματική εξουθένωση (ΣΕ), την αποπροσωποποίηση και το αίσθημα προσωπικών επιτευγμάτων (ΠΕ).

*Αποτελέσματα:* Διανεμήθηκαν 90 ερωτηματολόγια και λήφθηκαν 52 απαντήσεις (58%). Οι μέσες βαθμολογίες (σταθερές αποκλίσεις) ήταν 30.71 (11.5), 10.11 (5.9) και 33.37 (8.0) για την ΣΕ, αποπροσωποποίηση και ΠΕ, αντίστοιχα. Ο βαθμός της αποπροσωποποίησης ήταν σημαντικά υψηλότερος στις ΠΜΕΘ συγκριτικά με τις MENN ( $p = 0.032$ ) και ο βαθμός ΣΕ και αποπροσωποποίησης υψηλότερος στις νοσηλεύτριες συγκριτικά με τους γιατρούς ( $p < 0.013$  και  $p < 0.0001$ , αντίστοιχα). Οι εργαζόμενοι με προβλήματα υγείας παρουσίαζαν σημαντικά υψηλότερο βαθμό ΣΕ ( $p = 0.044$ ) και μικρότερη ικανοποίηση από τα ΠΕ τους ( $p = 0.046$ ). Η ανάλυση πολλαπλής παλινδρόμησης επιβεβαίωσε ότι το είδος της ΜΕΘ και η επαγγελματική ιδιότητα ήταν ανεξάρτητοι παράγοντες ΕΕ. Η ηλικία, η οικογενειακή κατάσταση και τα χρόνια εργασίας σε ΜΕΘ δεν επηρέαζαν σημαντικά το βαθμό της ΕΕ.

*Συμπεράσματα:* Το προσωπικό των MENN και ΠΜΕΘ παρουσιάζει σημαντικό βαθμό εργασιακής εξουθένωσης, ο οποίος επηρεάζεται από την επαγγελματική ιδιότητα (γιατρός ή νοσηλεύτρια), το είδος της ΜΕΘ και την κατάσταση υγείας των εργαζομένων. Το κράτος πρέπει να πάρει τα κατάλληλα μέτρα για την ελαχιστοποίηση των ΕΕ, ώστε να προληφθούν οι δυσάρεστες συνέπειες τόσο στο προσωπικό όσο και στους ασθενείς.

*Λέξεις Κλειδιά:* Αποπροσωποποίηση, Εργασιακό περιβάλλον, Προσωπικά επιτεύγματα, Συναισθηματική κόπωση, Ψυχολογική κόπωση.

## REFERENCES

- Maslach C, Schaufeli WB, Leiter MP. Job burnout. *Annu Rev Psychol* 2001;52:397-422.
- Caplan RP. Stress, anxiety, and depression in hospital consultants, general practitioners, and senior health service managers. *BMJ* 1994;309:1261-3.
- Engel JA, van der Gulden J, Senden T, van der Hof B. Work related risk factors for musculoskeletal complaints in the nursing profession: results of a questionnaire survey. *Occup Environ Med* 1996;53:636-41.
- Carayon P, Alvarado CJ. Workload and patient safety among critical care nurses. *Crit Care Nurs Clin North Am* 2007;19:121-9.
- Boyle A, Grap MJ, Younger J, Thornb YD. Personality hardiness, ways of coping, social support and burnout in critical care nurses. *J Adv Nurs* 1991;16:850-7.
- McGrath A, Reid N, Boore J. Occupational stress in nursing. *Int J Nurs Stud* 2003;40:555-65.
- Chen SM, McMurray A. Burnout in intensive care nurses. *Nurs Res* 2001;9:52-64.
- Embricaco N, Azoulay E, Kentish N, Pochard F, Loundou A, Papazian L. High level of burnout in intensivists. Prevalence and associated factors. *Am J Respir Crit Care Med* 2007;175:686-92.
- Guntupalli KK, Fromm RE Jr. Burnout in the internist-intensivist. *Intensive Care Med* 1996;22:625-30.
- Coomber S, Todd C, Park G, Baxter P, Firth-Cozens J, Shore S. Stress in UK intensive care unit doctors. *Br J Anaesth* 2002;89:873-81.
- Adali E E. Comparative study of professional burnout among nurses in internal medicine departments, ICUs,

- and emergency departments. Thesis of National and Kapodistrian University of Athens, Nursing Department, Athens, 1999.
12. Papadatou D, Anagnostopoulos F, Monos D. Factors contributing to the development of burnout in oncology nursing. *Br J Med Psychol* 1994;67:187-99.
  13. Kandri Th, Kalemi G, Moschos N. The burnout syndrome in the medical and nursing staff of the Trauma unit of Nikaia General Hospital. *Nosileutiki* 2004;1:116-25.
  14. Piko BF. Burnout, role conflict, job satisfaction and psychosocial health among Hungarian health care staff: A questionnaire survey. *Int J Nurs Stud* 2006;43:311-8.
  15. Cubrilo-Turek M, Urek R, Turek S. Burnout syndrome-assessment of a stressful job among intensive care staff. *Coll Antropol* 2006;30:131-5.
  16. Payne N. Occupational stressors and coping as determinants of burnout in female hospice nurses. *J Adv Nurs* 2001;33:396-405.
  17. Raggio B, Malacarne P. Burnout in intensive care unit. *Minerva Anestesiol* 2007;73:195-200.
  18. Bjork IT, Samdal GB, Hansen BS, Torstad S, Hamilton GA. Job satisfaction in a Norwegian population of nurses: a questionnaire survey. *Int J Nurs Stud* 2007;44:747-57.
  19. Strachota E, Normandin P, O'Brien N, Clary M, Krukow B. Reasons registered nurses leave or change employment status. *J Nurs Adm* 2003;33:111-7.
  20. Flinkman M, Laine M, Leino-Kilpi H, Hasselhorn HM, Salanterä S. Explaining young registered Finnish nurses' intention to leave the profession: A questionnaire survey. *Int J Nurs Stud* 2008;45:727-39.
  21. Coomber B, Barriball K. Impact of job satisfaction components on intent to leave and turnover for hospital-based nurses: A review of the research literature. *Int J Nurs Stud* 2007;44:297-314.
  22. Jorgensen Dick M. Burnout in doctorally prepared nurse faculty. *J Nurs Educ* 1992;31:341-6.
  23. Sveinsdottir H. Self-assessed quality of sleep, occupational health, working environment, illness experience and job satisfaction of female nurses working different combination of shifts. *Scand J Caring Sci* 2006;20:229-37.
  24. McNeely E. The consequences of job stress for nurses' health: time for a check-up. *Nurs Outlook* 2005;53:291-9.
  25. Archibald C. Job satisfaction among neonatal nurses. *Pediatr Nurs* 2006;32:176-80.
  26. Admi H, Tzischinsky O, Epstein R, Herer P, Lavie P. Shift work in nursing: is it really a risk factor for nurses' health and patients' safety? *Nurs Econ* 2008;26:250-7.
  27. Shader K, Broome ME, Broome CD, West ME, Nash M. Factors influencing satisfaction and anticipated turnover for nurses in an academic medical center. *J Nurs Adm* 2001;31:210-6.
  28. Kupperschmidt BR. Understanding generation X employees. *J Nurs Adm* 28;12:36-43.
  29. Shanafelt TD, Bradley KA, Wipf JE, Back AL. Burnout and self-reported patient care in an internal medicine residency program. *Ann Intern Med* 2002;136:358-67.
  30. Shanafelt TD, Sloan JA, Habermann TM. The well being of physicians. *Am J Med* 2003;114:513-9.