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Burnout Syndrome – Assessment of a Stressful Job among Intensive Care Staff

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A B S T R A C T

The purpose of the study was to investigate the degree of burnout experienced by intensive care staff, particularly, in Medical (MICU) and Surgical Intensive Care Units (SICU) General Hospital »Sveti Duh«, Zagreb. A sample group of 41 emergency physicians and nurses from MICU and 30 from SICU was tested. The survey included demographic data and Maslach Burnout Inventory (MBI) scoring test identified by the three main components associated with burnout: emotional exhaustion (MBI-EE), depersonalization (MBI-DEP), and personal accomplishment (MBI-PA) were assessed using 22-item questionnaire. The degrees of burnout were stratified into low, moderate, and high range. Mean total MBI (X±SD) were high in both groups: higher for the MICU (65.5±6.7) than for SICU staff (55.7±3.8, $p<0.05$). MICU staff showed moderate degree of MBI-EE (24.9±11.2), MBI-DEP (6.0±5.6), and as well as MBI-PA (34.4±8.8). The same parameters showed better results among SICU staff: low degree of MBI-EE (17.1±5.2), as well as low level of MBI-DEP (5.2±5.0), and moderate degree of MBI-PA (33.7±9.8). The differences between the groups was statistically significant only for the total MBI, and for MBI-EE ($p<0.05$). There were no significant differences between MICU and SICU staff for MBI-DEP or MBI-PA parameters. Overall job burnout represented in a moderate degree. The presence of burnout is a serious phenomenon, because it can lead to psychosomatic complaints, work-associated withdrawal behaviour, and a lower quality of care at intensive care units. Early recognition of burnout phenomenon as a result of prolonged stress and frustration among intensive care staff, contributes to better professional behavior, organizational structure changes in the work environment and better health care quality for critically ill patients.

Key words: *burnout syndrome, staff, medical intensive care unit, surgical intensive care unit*

Introduction

Burnout syndrome usually develops as a response to the chronic emotional strain and could be considered as a type of professional stress, which results from the social interaction between the person who provides help, and the person who receives that help. It presents with different symptoms, both somatic and psychological. Burnout defined as high levels of emotional exhaustion and depersonalization or low level of personal accomplishment. The cosequences of burnout may result in lower quality of care, low morale and increases job turnover.

Burnout is a job-related condition involving feelings of emotional exhaustion, depersonalization and reduced personal accomplishment. It affects persons involved in various professional and stressful activities, including the work in the intensive care unit[1–3]. Excessive stress causes both physical and psychological health problems in different working areas and serves as the instrument for measuring job-related stress in human service professions[4–12]. It consists of 22 questions for the early recognition of the burnout syndrome in different practice areas, i.e., medical and surgical intensive care units[2,5,12]. The Maslach Burnout Inventory (MBI) is a widely used as psychometric instrument for measuring burnout, designed by Maslach and Jackson[13]. The predictors of emotional exhaustion include: the low degree of involvement, the increased work pressure and, the absence of change along with the limited application of new approaches. The main burnout characteristics are: fatigue, negative emotions, exhaustion, depression, cynism, inability to concentrate, anxiety, insomnia, apathy, irritability, and sometimes increased use of alcohol, tobacco or drugs.

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A number of stress involving factors exist in the intensive care units; the demoralizing situation of patients not getting better despite best efforts of intensive care staff, unrealistic expectations of families, lack of hospital beds, necessity to make everyday triage decisions, various conflicts, poor support hospital services, ethical dilemmas, and everyday dying and death. The early recognition of the burnout syndrome, considered as a type of professional stress, appears suitable for the evaluation of some modalities of response to stress among intensive care staff, in order to obtain some improvement for better organisation within hospital institution.

The best prevention for burnout among physicians and nurses in the intensive care units is the concept which promotes their own well-being on psychical, emotional and psychological levels which could be evaluate by using MBI scoring test.

Subjects and Methods

Three burnout components were measured: MBI-EE, MBI-DEP and MBI-PA, using the 22 items questionnaire designed by Maslach and Jackson[13], in order to determine relationships between the two groups of MICU and SICU staff. The anonymous questionnaire was completed by the medical staff.

The burnout syndrome is conceptualised as a variable ranging from low, through moderate, to high degree of the feelings experienced (Table 1).

A higher degree of burnout correlates well with higher scores of MBI-EE, MBI-DEP, while inversely correlates with MBI-PA. For both the MBI-EE, and MBI-DEP subscales, higher mean scores, and lower mean score of MBI-PA correspond to higher degrees of experienced burnout.

Nine items are used in measuring MBI-EE (work-related emotional exhaustion, loss of concern). Five items are used in measuring MBI-DEP (depersonalized response, negative and cynical attitudes toward to a client). Eight items are used in measuring MBI-PA (competence and personal achievement at work, tendency to evaluate oneself negatively). A sample group of 41 emergency physicians and nurses from MICU and 30 from SICU was tested. Certain demographic data were compared: mean age, sex, marital status (Table 2), number of children, level of education of MICU and SICU staff, mean length (years) of employment at the ICU, as well as total MBI, MBI-EE, MBI-DEP, MBI-PA, according to the original MBI scoring test.

TABLE 1
MASLACH BURNOUT INVENTORY (MBI) SCORING[13]

MBI subscale	Range of experienced burnout		
	Low	Moderate	High
Emotional exhaustion	≤17	18–29	≥30
Depersonalization	<6	6–11	≥12
Personal accomplishment	≥40	39–34	≤33

TABLE 2
BASELINE CHARACTERISTICS OF MEDICAL INTENSIVE CARE UNIT AND SURGICAL INTENSIVE CARE UNIT STAFF

	MICU (N=41)	SICU (N=30)
Age (years) (X±SD)	38.4±8.98	33.24±9.77
Number of children (X±SD)	1.34±0.98	0.86±1.43
Sex (female / male)	33/8	26/4
Level of education	(%)	(%)
Physicians	17.07	38.10
College Nurses	12.20	9.52
Registered Nurses	53.66	52.38
Marital status	(%)	(%)
Married	75.61	42.86
Unmarried	17.07	47.62
Divorced	4.88	4.76
Widower/Widow	2.44	4.76

Mean age (X±SD) for MICU staff was 38.4±8.9 years, and 33.2±9.7 years for SICU staff. There were 33 female and 8 male subjects in MICU and 26 female and 4 male subjects in SICU. The level of education analysis showed: 17.0% physicians, 12.2% college nurses, 53.6% registered nurses in MICU: 38.1%, 9.5%, 52.3% respectively in SICU. According to the number of children (X±SD), MICU staff showed 1.3±0.9, and SICU staff 0.86±1.43. In MICU there were: 75.6% married, 17.0% unmarried, 4.8% divorced and 2.4% widower/widow, and 42.8%, 47.6%, 4.7% and 4.7% respectively in SICU. MICU staff was older, the prevalence of physicians was lower, with a higher average number of children and a higher percentage of married subjects. As shown in Table 2, the percentage of registered nurses in MICU and in SICU was equal, 53.6% and 52.3% respectively, and of college nurses: 12.2% and 9.5% respectively.

Mean age (X±SD) according to the level of education of MICU physicians was higher (46.1±0.7 years) than in SICU (41.2±0.8 years), as well as for college nurses

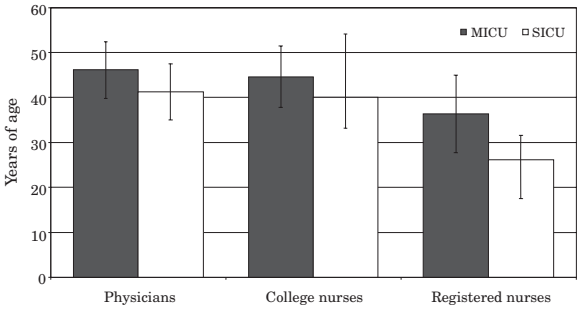

Fig. 1. Mean age of Medical Intensive Care Unit (MICU) and Surgical Intensive Care Unit (SICU) staff according to the level of education (X±SD).

(44.6±0.1 and 40.0±0.5 years respectively) and registered nurses (36.3±0.7 and 26.1±0.3 years respectively, Figure 1).

Statistics

Statistical analyses were carried out by X±SD, and Mann Whitney rank sum t-test, ($p<0.05$).

Results

The mean number of years employed in critical care (X±SD) was higher for MICU physicians (10.7±1.0 years), college nurses (21.0±1.0 years) and registered nurses (11.8±0.5 years) than for the same profile in SICU (8.3±0.3, 14.5±0.2 and 2.9±0.3 years respectively, $p<0.05$) (Figure 2).

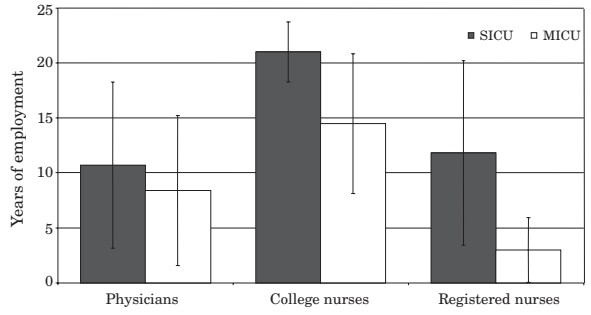

Fig. 2. Mean length of employment (years) of Medical Intensive Care Unit (MICU) and Surgical Intensive Care Unit (SICU) staff according to the level of education.

Total scores of MBI were high in both groups: higher for MICU (65.5±6.7) than for SICU staff (55.7±3.8, $p<0.05$). The two groups differed significantly when three components of the MBI were compare. On the burnout scale, moderate degree of MBI-EE (24.9±11.2), MBI-DEP (6.0±5.6) and MBI-PA (34.4±8.8) was found among MICU staff. The analysed parameters among SICU staff showed better indicators; moderate MBI-EE (17.1±5.2), MBI-DEP (5.2±5.0), and MBI-PA (33.7±9.8), but in lower degree than in MICU staff. The differences between the groups were statistically significant for the total MBI sum, and for MBI-EE ($p<0.05$). MBI parameters indicate the increased degree of burnout among MICU in comparison with SICU staff, but in the moderate range. There are no statistically significant differences between the groups for the MBI-DEP and MBI-PA parameters ($p>0.05$). The results were shown in Table 3. Total MBI and MBI-EE were the most discriminating indicators for the presence of burnout in the analyzed parameters.

TABLE 3
DIFFERENCES OF MASLACH BURNOUT INVENTORY (MBI) SCORING BETWEEN MEDICAL INTENSIVE CARE UNIT (MICU) AND SURGICAL INTENSIVE CARE UNIT (SICU) STAFF (X±SD)

	MICU (N=41)	SICU (N=30)
Total MBI	65.53±2.89	55.70±2.67*
MBI-EE	24.97±11.25	17.10±5.27*
MBI-DEP	6.06±5.64	5.27±5.08
MBI-PA	34.44±8.85	33.70±9.85

*$p<0.05$, MBI-EE – emotional exhaustion, MBI-DEP – depersonalization, MBI-PA – personal accomplishment, MICU – medical intensive care unit, SICU – surgical intensive care unit

Discussion

The majority of analyzed sample were female, age below 40 years, and an average of stay in ICUs for physicians was longer than for college and registered nurses. These data are in accordance with various studies in recent literature[15–17]. Probably medical staff working stressful job with critically ill patients doesn't really favour the long-term stay in ICUs.

In our study, the total degree of MBI is high in both groups, higher in MICU than in SICU staff. In particular, MICU staff working in emergency department reported statistically higher degree of burnout, compared with SICU staff, but in the moderate range. The degree of depersonalization and lack of personal accomplishment were also higher in MICU department but not a statistically significant compared with SICU department staff. Although those results showed overall moderate degree of total MBI and among MICU staff they strongly point out the existence of burnout. MBI-EE is considered to be the first stage of burnout syndrome and probably is directly related to high levels of work overloaded demands. It points not only to the patient care issue, staff frustration, but also to a poor support system in the working place area. These estimations are in accordance with the results of different authors[5,14,18–19], although there are only a few studies that have analysed the occurrence of burnout in ICU staff[15,18,19]. Guntupalli and Fromm[18] measured burnout among internal medicine ICU staff, 248 male and 28 female. Their results showed the presence of emotional exhaustion parameters in one third of the examined internal medicine ICU staff. More than 20% of ICU staff showed elements of high-level of depersonalization, and 40% of low personal accomplishment. The emotional exhaustion subscale of the MBI averaged 22.2±9.5, with one third of subjects scoring in the high range. Personal accomplishment scores were poor, with the mean value of 30.9±6.4, while 59% of subjects scoring in the low range. Despite such results, which point to the existence of burnout, more than two thirds of the subjects continue to work in ICU until retirement. Surprisingly, the presence of emotional exhaustion does not correlate either with the age of ICU staff, or hospital size[18]. Our study showed similar results to Guntupalli study[18]; moderate degree of emotional exhaustion, depersonalization, and personal accomplishment in MICU staff and better scores on the MBI subscale for the same parameters in SICU staff but statistically sig-

nificant only for emotional exhaustion and total Maslach Burnout Inventory.

In the research done by Goldberg et al.[14] between years 1992–1995, involving 1272 ICU emergency physicians, more than 60% of examinees showed moderate to high degree of burnout. Interestingly, the length of employment and staff age were not significant predictors of burnout. Data from the study by Keller and Koenig[5,] analyzed a sample of 77 physicians employed in emergency departments, revealed that 60% of the physicians showed medium to high emotional exhaustion and 78% medium to high depersonalization, while 84% reported medium to high levels of personal accomplishment.

Bell et al.[20] were assessed the burnout analyses of emergency medicine physicians assistants Fifty-nine percent of them had moderate or high burnout range on the subscale of emotional exhaustion, 66% on the depersonalization and only 34% on the personal accomplishment subscale. Similarity was noted with regard to burnout among emergency medicine physicians' assistants and emergency physicians.

Bruce and al.[21] were analyzed burnout in a sample of 83 physicians, 28% experienced high levels of two or three aspects of burnout. Emotional exhaustion correlated with a greater need for preventive support measures.

A sample of 237 nurses from 18 units (AIDS departments, special care units, oncology, medical intensive care units, general medical units) in seven hospitals showed no significant differences in burnout scores for nurses working in different units[6]. There was one exception; medical ICU nurses scored significantly lower on the MBI-PA subscale. Job-related tension was a key predictor of MBI-EE and it was associated with greater feelings of MBI-PA. The study done by Keane et al.[7] showed that ICU nurses (medical and surgical) did not differ in level of burnout from non-intensive care units' nurses (intermediate surgical and medical units, general and medical units).

The analysis of burnout in three hundred female critical care nurses employed in nine hospitals, who had worked full-time for at least 3 months, showed results of a causal progression of job-related stress, and emotional exhaustion; whereas job-related satisfaction had a significant effect on emotional exhaustion[22.] Significant levels of moderate to high burnout were discovered on the subscales of emotional exhaustion and depersonalization among nurse teachers investigated by Hunter and Houghton[23]. The study done by Lloyd et al.[4] assessed burnout, depression, and job satisfaction among Canadian emergency physicians. Their results showed that forty-six percent of the sample fell within the medium to high level of emotional exhaustion, 93% within the medium to the high range for depersonalization, and 79% within medium to low range for personal accomplishment.

Significant associations between burnout also found in different work profile and justified for anaesthetists[24,] intensive care nurses[6,22,25,] physicians[1,3,26,] nurses[6,27,28,] medical personnel in general hospitals[29,] psychiatric institutions and mental health professionals[3,30,] AIDS departments[31,32], dialysis staff[33,] oncology department[34.]

The physicians and nurses constantly surrounded by critically ill patients, faced with ethical dilemmas is particularly prone to be affected by the burnout syndrome[1,2,22,27,30]. Therefore, it is not unexpected that the greatest part of our research refers to the existence of emotional exhaustion among ICU physicians and nurses and high degree of total MBI. Although the overall emotional exhaustion is moderate, it is a reliable burnout indicator, greater among MICU in comparison to SICU staff. One possible explanation of burnout might be connected with the parameters of higher age and longer employment period for MICU staff in comparison to SICU staff, diminished coping skills, high patients' family demands, personal health problems, exposure to death and dying, inadequate resources and lack of social support. Although the level of frustration according to the burnout subscales is not very high for either MICU, or SICU staff, a considerable lack of work-satisfaction is noted. In order to control and prevent the occurrence of burnout phenomenon, the early identification of burnout is necessary, as well as prompt changes in health policy inside critically care unit.

Conclusion

In order to assess work-related stressful situations, the burnout MBI scoring could be applied to ICUs staff. The early recognition of burnout is important, because it enables the staff to adjust their own feelings more successfully, to meet the criteria of professional behaviour and to improve their care for ICU patients. The MBI test makes the analysis of this process possible, as well as the introduction of strategic measures of prevention/intervention trial. The recognition of parameters contributing to the burnout phenomenon may prove as criterion in the prevention of burnout among ICUs staff.

The limitation of our study was mainly due to relatively low number of ICUs participants. These results suggest further investigation of burnout syndrome as the everyday problem, in a different working place area especially among stressful job participants.

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BURNOUT SINDROM – PROCJENA STRESNOG RADA KOD DJELATNIKA INTENZIVNE SKRBI

SAŽETAK

Burnout, ili sindrom izgaranja, (Maslach Burnout Inventory – MBI) sastoji se od 3 subskale koje služe kao pokazatelji kojima se procjenjuje stupanj emocionalne iscrpljenosti (MBI-EE), depersonalizacije (MBI-DEP) i osobnog postignuća (MBI-PA) u različitim djelatnostima koja su podložna stresnim situacijama. Maslach i Jackson osmislili su test kojim se može procijeniti stanje iscrpljenosti i različitih frustracija kod djelatnika koji rade odgovoran posao, a gdje često izostaje očekivana nagrada. Posljedica burnouta očituje se nemotiviranošću, neučinkovitošću i niskom razinom moralnih kriterija u izvršavanju radnih zadataka. Kronični unutrašnji pritisak, kojemu su osobito izloženi djelatnici koji rade u jedinicama intenzivnog liječenja, ali i drugim stresnim profesijama tijekom obavljanja radnih zadataka pogoduje nastanku burnout-a. U našem ispitivanju provedeno je testiranje kod 41 djelatnika internističke (JIL-I) i 30 djelatnika kirurške jedinice intenzivnog liječenja (JIL-K). Između JIL-I i JIL-K postoji statistički značajna razlika s obzirom na ukupni MBI i emocionalnu iscrpljenost ($p<0,05$). Djelatnici u JIL-I pokazuju veću emocionalnu iscrpljenost i veći ukupan zbroj MBI u odnosu djelatnike u JIL-K. Iako je burnout u JIL-I prema mjerenju umjerenog dosega, ipak predstavlja jasan pokazatelj prisutnosti burnouta. Stoga je važno rano prepoznati parametre burnout-a kod djelatnika koji rade odgovoran posao u jedinicama intenzivnog liječenja radi što boljeg usklađivanja vlastitih osjećaja i zadovoljenja kriterija profesionalnosti.